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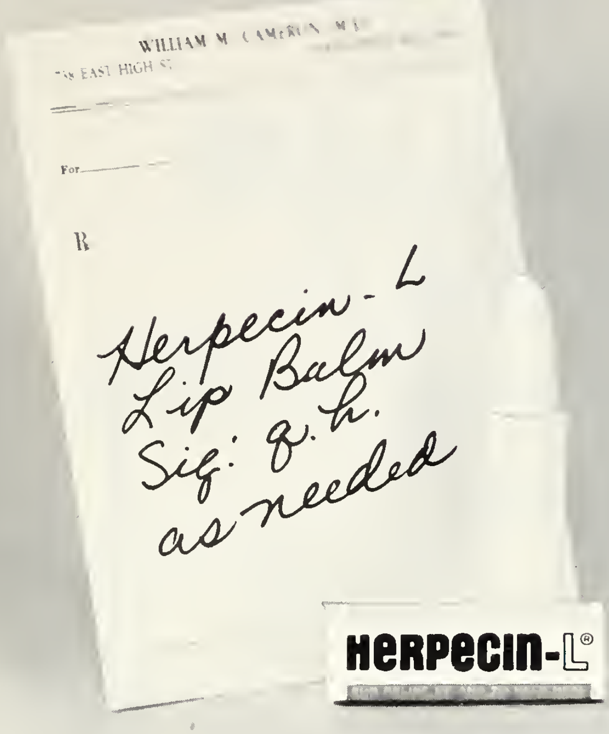

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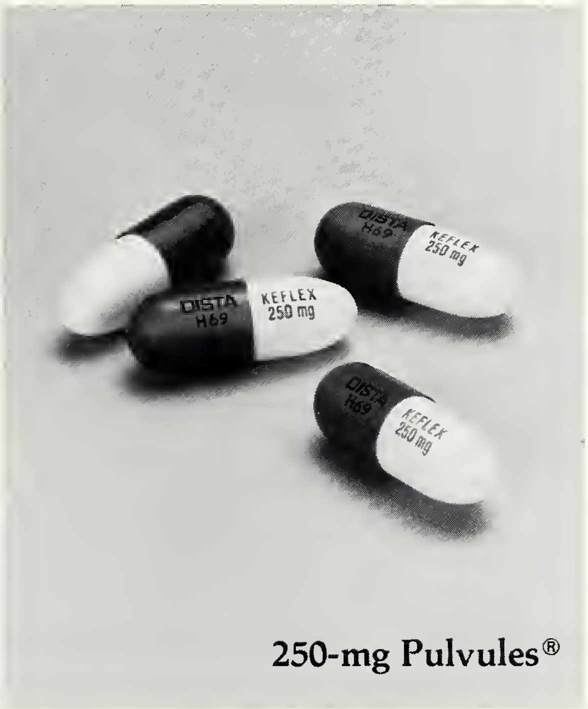

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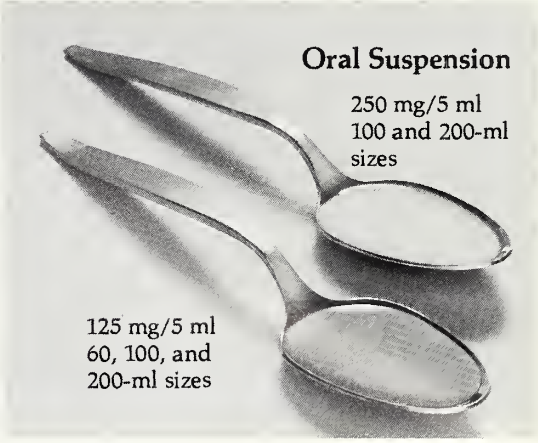

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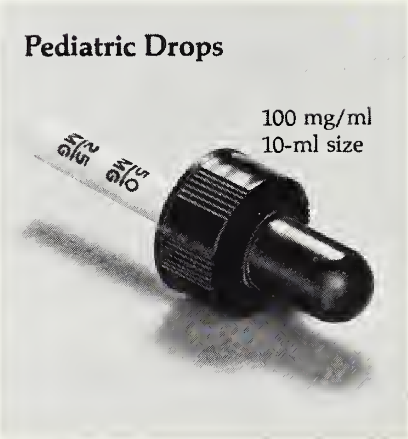

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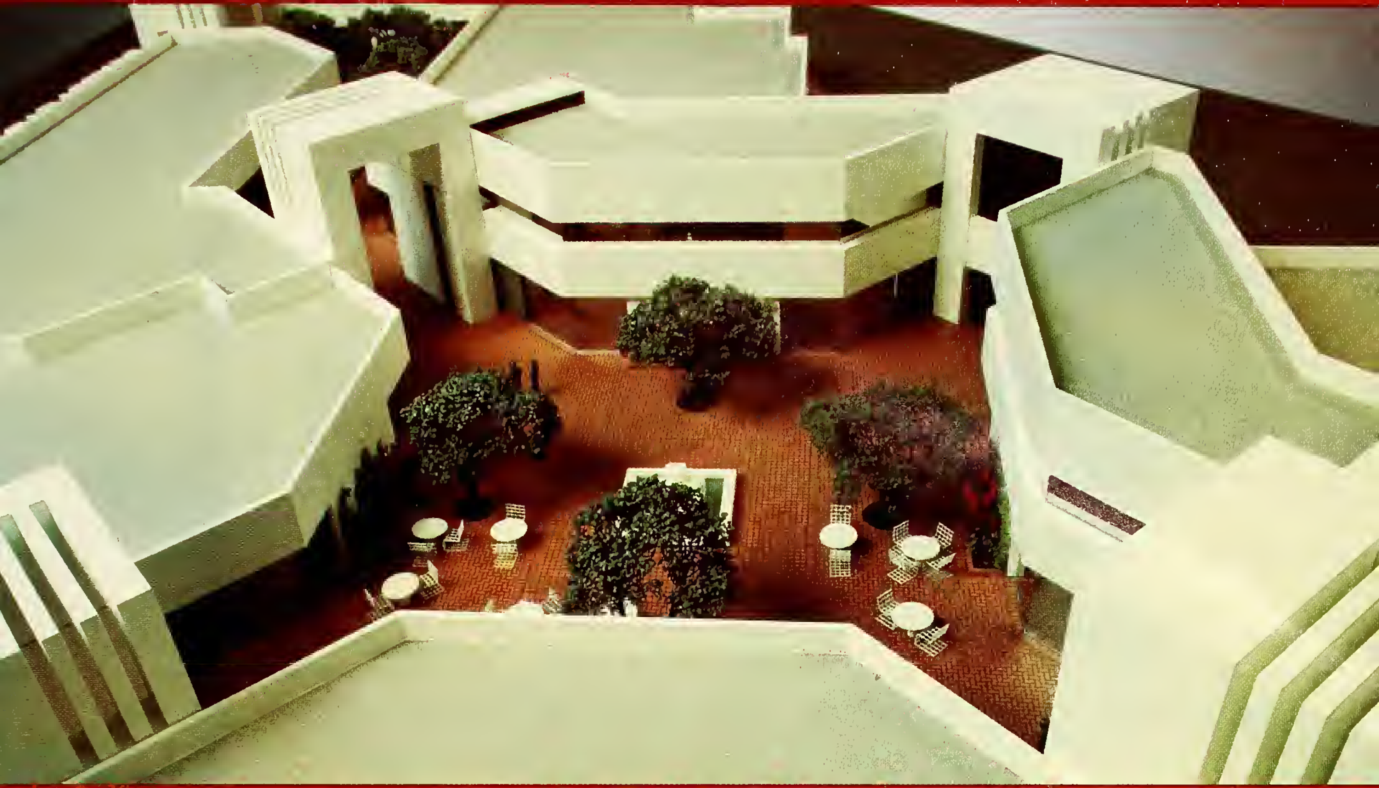

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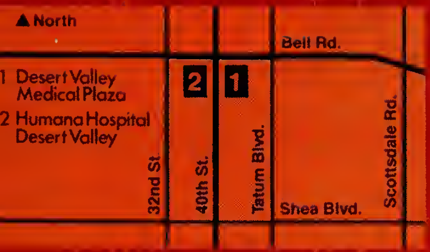

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Exercise Training in Chronic Obstructive Lung Disease

Bernard J. Steyer, M.D.

Editors:
Bernard Levine, M.D.
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Abstract

Exercise physiology and training in patients with chronic obstructive lung disease is reviewed and compared with the response observed in normal individuals and patients with cardiovascular disease. General exercise training is beneficial for patients with emphysema and chronic obstructive bronchitis, but the effects are not transferable to untrained tasks. Specific ventilatory muscle training increases ventilatory capacity, the limiting factor to exercise in patients with chronic obstructive lung disease, and thereby results in improvement in exercise capacity which is transferable to untrained tasks. Cardiovascular reconditioning does not usually result from training in these patients, probably because of their respiratory limitations.

Key Words: Lung diseases, obstructive, exercise therapy and breathing exercises.

The purpose of this paper is to review and evaluate the value of exercise reconditioning, including specific respiratory muscle training, in patients with emphysema and chronic obstructive bronchitis. Basic exercise physiology focusing on the normal ventilatory response will first be reviewed and compared with the response observed in patients with chronic obstructive lung disease. The effects of exercise training and specific ventilatory muscle training in these patients will then be discussed.

Exercise Physiology

The ventilatory and circulatory responses to exercise are coupled and precisely regulated in order to meet the energy requirements of the actively contracting muscle. The remarkably constant pH, PO$_2$ and PCO$_2$ which are maintained during submaximal exercise (below the level at which lactic acid is produced by muscle) are illustrative of this finely tuned control.[1]

An understanding of the physiologic responses to exercise above the "moderate" level introduces the concept of the anaerobic threshold (AT) and emphasizes the critical role of the ventilatory system as not merely a system for supplying fuel in the form of oxygen, but also as a system to dispose of the potentially harmful metabolic waste products of exercise.

The AT is defined as that level of exercise or work which results in increasing production of lactic acid by actively contracting muscle. Blood lactate begins to rise as the lactic acid is buffered by bicarbonate. This results in increasing the demands of the ventilatory system beyond what is necessary for supplying oxygen for two reasons. First, CO$_2$ production is increased as a direct result of the buffering of lactic acid by bicarbonate. Second, the blood hydrogen ion concentration increases which further stimulates the ventilatory system to compensate for this developing metabolic acidosis.

During submaximal exercise (below the AT) alveolar ventilation (V_A) and minute ventilation (V_E) increase in proportion to increasing oxygen consumption (VO$_2$). This is in direct proportion to the CO$_2$ production (VCO$_2$) which at this level results solely from the metabolism of fuel. Both the respiratory rate and the tidal volume increase to meet the increasing ventilatory demands. The latter results in a decrease in the ratio of dead space to tidal volume.[2]

As the work intensity increases above the AT, CO$_2$ production and minute ventilation increase at a rate which is greater than the increasing VO$_2$. By measuring the end tidal PCO$_2$, PO$_2$ and minute ventilation during increasing incremental exercise the AT for a given individual can be identified by the increasing end tidal PO$_2$, decreasing end tidal PCO$_2$, and increasing respiratory exchange ratio. The end tidal PCO$_2$ decreases because minute ventilation increases at a greater rate than increasing CO$_2$ production as a compensatory mechanism for the developing metabolic acidosis.[4]

The AT occurs at approximately 50% to 60% of an individual's maximum work rate. Work performed below the AT can be endured for long periods relative to work performed above this level. The AT is a general measure of an individual's cardiovascular fitness since it is higher in individuals who are well conditioned and responds to endurance training by increasing.[3] It is thus used both as a measure of an individual's state of physical fitness and in assessing his response to a

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program of reconditioning.

Exercise Limitation due to Lung Disease

Patients with emphysema and chronic obstructive bronchitis are limited in exercise by their reduced ventilatory capacity and their increased ventilatory requirement which results from their increased work of breathing.[4] Nery et al.[5] used the breathing reserve (BR) to help distinguish patients with a ventilatory limitation to exercise from both normals and patients with cardiovascular disease. The BR is the relationship of the minute ventilation during maximum exertion to the maximum voluntary ventilation (MVV). Predictably, patients with chronic obstructive lung disease had a much lower BR compared to either group.

There are other parameters which can help to distinguish respiratory exercise limitation from cardiovascular, but these will not be discussed further here. However, it is worth mentioning that measurement of the AT in patients with respiratory disease may not be possible because many are unable to reach that level of exercise due to their ventilatory limitation. Even when it can be measured, it should be viewed as an index of cardiovascular response and should not be used alone as a measure of training effect in patients with lung disease.

Effect of Exercise Training in Normals

Davis et al.[3] showed that AT increased in 14 middle-aged men following a period of retraining. Also increased after training were the maximum O_2 consumption (VO_2 max.), maximum minute ventilation (V_E max), maximum CO_2 production (VCO_2 max), maximum work rate and the ratio of V_E max to the MVV. Training did not increase the MVV; it did reduce the V_E max/VO_2 max.

At submaximal exercise (equal levels of work below the AT) the steady state heart rate (HR), respiratory exchange ratio (R), V_E and ventilatory equivalent (V_E/VO_2) all decreased post training. In other words, for the same level of work the total amount of ventilation required and the amount of minute ventilation per liter of O_2 consumed decreased after training. The decreased R represents a shift to increasing fat metabolism which accounts for the decreased ventilatory requirements.

A decreased HR and increased stroke volume (SV) at rest and during submaximal exercise are the cardiovascular hallmarks of conditioning. These effects are greatest when training is done at 90% to 100% of the maximum HR.

Response to Exercise Training in Patients with COPD

The first clinical studies showing a beneficial effect of exercise reconditioning in patients with COPD appeared in the medical literature in the 1960's. Prior to that time rest and avoidance of stress were generally recommended for these patients.[6]

A number of uncontrolled studies published since 1964 show that patients with COPD do benefit from exercise training. Pierce et al.[7] showed that in nine subjects with severe COPD undergoing treadmill exercise training the HR, VO_2 and V_E all decreased following training for submaximal work loads. They also showed that VO_2 max and the maximum work capacity (MWC) increased. There were no changes in pulmonary function tests and no adverse effects.

Paez et al.[8] conducted a similar study in eight patients, but the study design differed in an important aspect from Pierce's. Patients were trained on a treadmill, but testing was done on a bicycle ergometer. The HR, VO_2 and V_E during submaximal exercise did not change significantly posttraining though the MWC increased. The latter was based on improved treadmill performance. They noted that walking stride increased an average of 23% and concluded that improvement in exercise performance in COPD patients resulted from improved mechanical efficiency for the specific task which is learned and that this is not transferable to other activities. They also noted an increased A-V O_2 difference posttraining which they attributed to improved muscular efficiency in extracting O_2 from blood allowing submaximal exercise to be performed at a lower cardiac output. The results of additional studies [9-14] of exercise training in COPD patients are summarized below.

Basically, the most consistent finding from these studies is an improvement in MWC, whether measured as endurance of submaximal exercise or maximum work load accomplished. Whenever measured, the VO_2 max has increased after training. Pulmonary function studies do not change after training and results during submaximal exercise have been inconsistent.

The conflicting data from the submaximal exercise testing is of interest. It seems that the weight of evidence is against a true physiologic cardiovascular training effect in patients with COPD compared with normal individuals. The reasons for this are controversial, but most likely relate to the inability of these patients to train at levels of exercise close enough to their cardiovascular limitations to achieve any benefit since they are so severely limited by their reduced ventilatory capacity. This is not the case for both normal individuals and patients with heart disease who have a cardiovascular limitation. When improvements are seen during submaximal exercise in COPD patients they are likely the result of improved efficiency at performing the learned task as shown by Paez.[8] This accounts for some of the improvement noted in the MWC, but not all since the VO_2 max also consistently increases showing an improved ability to perform work as a result of training.

Though the physiologic changes are interesting, it is most important to note that the patients in these studies consistently enjoyed an improvement in their subjective sense of well-being, as well as their ability to perform the tasks of daily living. Of importance, also from the practical standpoint, is that the benefit realized from training is specific for the task which is trained. Therefore, there is no sense in training COPD patients in rowing or weight lifting if the goal is to improve walking endurance.

Ventilatory Muscle Training in COPD

Since the major limitation to exercise endurance in ients with COPD is their reduced ventilatory pacity, it would be beneficial to improve this in some y. Though general training results in some improve- ent in exercise endurance as discussed above, there es not appear to be any specific improvement in ntilatory capacity which might explain why the effects not transferable. We know from the above studies t pulmonary functions including MVV do not change sttraining.

Belman and Kendregan[15] specifically evaluated the ects of general training on ventilatory muscle durance in patients with COPD. Eight patients derwent arm training and seven underwent leg uscle training. They used the maximum sustained ntilatory capacity (MSVC) which is the maximum nute ventilation that can be sustained for 15 minutes der isocapnic conditions as an index of ventilatory uscle endurance. Though exercise endurance for the ecific trained task increased, MSVC, MVV, and all her pulmonary functions were unaffected by training. t, what are the effects of specific respiratory muscle ining?

Belman and Mittman[16] evaluated the effects of ntilatory muscle training on both MSVC and general ercise endurance in ten COPD patients and found that SVC increased 31% from pretraining values. Exercise durance for both leg cycling and arm cycling creased significantly and the 12-minute walk distance creased by 12%. Of note, none of these tasks were ecifically trained. The training consisted only of two 15 nute runs on the MSVC device daily for six weeks.

Pardy et al.[17] compared the results of inspiratory uscle training (IMT) to physical therapy (PT) in 17 OPD patients. The IMT consisted of 15 minute sessions inspiring against a resistance twice daily. The amount resistance was gradually increased; the starting point s based on EMG findings showing fatigue of the spiratory muscles at a given resistance. Physical erapy consisted of exercising on a treadmill, cycle, irs, and lifting small weights.

Following the training period, the 12 minute distance lked and endurance time for submaximal exercise creased significantly only in the IMT group. The VO_2 ax increased greater than 19% in four of the IMT group mpared to only one in the PT group. These changes ere noted despite a general improvement in the PT oup in the specific tasks in which they trained.

Pardy et al.[18] further evaluated IMT in 12 COPD tients. They divided the patients into two groups, A d B, based on their response to IMT. The five Group A tients showed no increase in endurance time post aining compared with the seven Group B patients who owed significant increases in both the 12-minute stance walked and endurance time for submaximal ercise. The VO_2 max also increased significantly only Group B patients. They noted that none of the Group patients had EMG changes during submaximal ercise prior to training heralding respiratory muscle tigue, while six of the seven Group B patients did show such changes. Apparently IMT did not benefit Group A patients because respiratory muscle fatigue was not the limiting factor for them, unlike the patients in Group B.

Casciari et al.[19] showed the specific benefit of breathing retraining (BRT) in COPD patients. They divided 22 patients into two groups; Group 1 consisted of ten patients who trained on a treadmill for six weeks followed by three weeks of BRT which consisted of pursed-lip breathing, expiratory abdominal augmentation, synchronization of movement of the abdomen and thorax using magnetometry and biofeedback, and relaxation techniques for the accessory muscles of respiration. Group 2 consisted of 12 patients who had nine weeks of treadmill training, but no BRT.

Work performance during treadmill exercise increased significantly more in the BRT group. Though there were no changes in baseline PFT's, tidal volume during exercise increased significantly in group 1 only after the period of BRT. Of further interest, arterial PO_2 increased significantly in group 1, again only after BRT.

As final additional evidence of the beneficial effects of specific ventilatory muscle training in COPD, Sonne and Davis[20] trained six patients with an inspiratory resistive device for six weeks and compared them to three patients trained with the same device without the increased resistance. They used a cycle ergometer for exercise testing and found that VO_2 max, maximum work rate, V_E max and the amount of inspiratory resistance tolerated all increased significantly in the six who trained, but in none of the three who sham trained. All six patients in the exercise group, but none of the controls reported an increased ability to perform everyday activities.

Conclusions

Exercise training and testing with a focus on cardiovascular conditioning is not appropriate for patients with COPD because they are generally unable to exercise at a level close enough to their cardiovascular capacity to realize a physiologic training effect due to their severe ventilatory limitations. However, exercise is clearly of benefit for patients with COPD. It should be recognized that the benefits enjoyed following a period of training are limited to the specific type of training done. However, since ventilatory capacity is the major limiting factor for most patients with COPD, the benefits of specific ventilatory muscle training appears to be transferable to other activities. Therefore, a program of respiratory muscle training combined with general exercise reconditioning focused specifically on improving the patient's ability to perform the tasks of daily living is probably best. Pulmonary function will not change, but patients will gain an improved sense of well-being and an enhanced functional status.

Abbreviations

AT — anaerobic threshold
V_E — minute ventilation
VO_2 — oxygen consumption
ACO_2 — carbon dioxide production

BR — breathing reserve
MVV — maximum voluntary ventilation
VO_2max — Maximum oxygen consumption
$V_E$max — maximum minute ventilation
V_E/VO_2 — the ventilatory equivalent
R — respiratory exchange ratio
SV — stroke volume
HR — heart rate
MWC — maximum work capacity
MSVC — maximum sustained ventilatory capacity
IMT — inspiratory muscle training
EMG — electromyogram
BRT — breathing retraining

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AM *Dermatology*

Chemosurgical Correction of Chronic Ingrowing Toenails

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Editors:
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Abstract

Historically, the alleviation of a painful ingrowin toenail has been described in the literature for man decades. Proponents of a conservative technique hav devised many and bizarre methods to attempt a chang in the growth pattern of the nail plate. The weakness o such therapy lies in the fact that the growth pattern o the nail plate cannot be altered in its predetermine direction unless some matrix cells are modified o destroyed. Conservative measures fail to accomplis this. Surgery as a means of permanent correction is th hallmark of the plastic or general surgeon. While thi method does attack the matrix and is the essence of th treatment, the recurrence rate after surgical excisio and the potential for postoperative infection have bee well documented. The chemical destruction of matri cells has proven an acceptable alternate to surgery. Thi paper will address that particular therapy in detail a another solution to a perplexing problem.

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onservative Measures

Packing the nail sulcus with a variety of materials such felt, cotton, lambs wool, gauze, foam rubber, celastic, ental acrylic and plaster of paris is advocated by many ofessionals, both medical and podiatric.[1-10] These nnot change the nail growth, rather they tend to large the sulcus by creating a pressure against the ate and the nail lip. Other conservative proposals clude cutting a "V" in the free margin of the nail plate[4] reducing the thickness of the plate by scraping the rface with a sharp instrument or a piece of broken ass.[6] A favorite method in England, quite ingenious but oit more painful, utilizes a wire under tension that is rced under the lateral and medial margins of the nail ate. (Figure 1). Another British alternative employs a eel spring about three or four millimeters wide, forcing is under the nail margins and creating upward tension means of a turnbuckle. The author's personal ex-rience with these devices has been unrewarding both the doctor and the patient and they have been scarded. In all instances, conservative attempts to ange nail plate growth have failed. The most that is complished is temporary relief of pain and an increase the size of the nail sulcus.

rgical Measures

Surgeons, both medical and podiatric, have for many ars used a variety of methods to insure that nail growth es not recur by excising matrix tissue. Some tech-ques attack the soft tissue of the toe by excising a edge of skin at the free end of the toe;[11] a full wedge of sue at the side of the toe;[12,13] a section of pulp at the stal lateral corner of the digit.[14] The more traditional ethod of nail plate and matrix excision as well as the ngulabia involved removes both hard and soft tissue.[15-19] interesting variation of the standard procedure is e placement of a "gutter" into the excised area.[20] dvocates describe this method as being a "C" shaped astic insert around the excised nail plate creating an larged sulcus. The authors, however, in comparing e results of the standard resection versus the "gutter" ted that the wedge resection alone was superior in eir study. The variety of methods is proof that no one ute can be used in all instances. The aggressiveness d trauma thus inflicted on the patient results in olonged healing, potential for infection, (the nail lcus can never really be aseptically prepared) and the currence rate has led to a search for less savage ethods of eliminating nail matrix cells. The use of egative galvanic currents[21] is considered less traumatic. ser techniques have recently been advocated from the cture platform, but have not found their way into the rmal literature. A method not new in the medical field s recently surged to the fore as a better and less umatic way to cure the chronic ingrowing toenail. e use of caustic elements to destroy matrix tissue has ecome popular and has invaded the current erature.[22-25] The following is a detailed description of ch a method employed by the author.

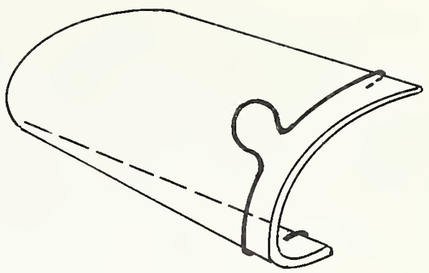

Figure 1

Note the wire is forced along the nail margins. The spring effect of the device lies flat upon the nail plate and forces the margins to be lifted out of the sulcus. The nail plate may fracture due to the tension. The placement of the wire may require anesthesia.

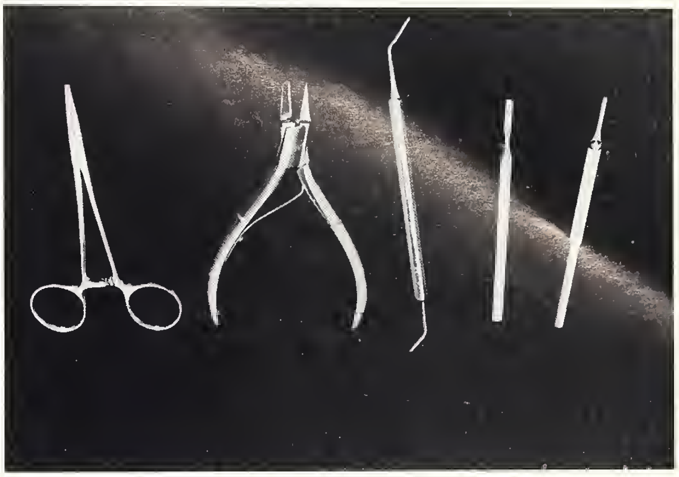

Figure 2

From left to right, the instruments are: a small Kelly, an English type Nail Splitter, a double-ended nasal rasp, a periosteal elevator and a Beaver handle with a Number 61 blade inserted.

Chemosurgical Methods

There are several distinct advantages to the chemical use of matrix cell ablation. The procedure is atraumatic since there is no incision into the posterior nail wall. The rate of recurrence is as good or better than traditional surgical techniques.[8] The ease of the procedure lends itself to family practice physicians, dermatologists, nurse practitioners and physicians assistants. The operation may be safely performed in an office setting, requires no special footwear, allows for ambulation the same day and permits bathing the next. In the Podiatry Clinic at the Veterans Administration Medical Center in Tucson, over two hundred phenolization techniques have been performed with a recurrence rate of less than three percent and with a follow-up period of over three years. In all cases no preoperative sedation was given. Infections were less than one percent. Some postoperative erythema was present in many instances, due to the caustic effect from the use of carbolic acid. However, this did not create any distress and the patient was comfortable with closed-toe shoes. The lytic nature of the phenol used caused a moderate degree of drainage for two or three weeks. The end result has been acceptable to the patient and the doctor. The following is the procedure that has been used:

The five instruments that are required for this procedure are shown in Figure 2 and are available from several Podiatry Supply Houses.* Normally, a saturated (88%) solution of phenol is used. Anesthesia is obtained by using approximately four or five milliliters of Xylocaine 1%[R1] (Note that *no epinephrine* is in this Xylocaine solution). A ring block of the entire digit produces profound anesthesia. (Figure 3a, b, c) A folded gauze pad is placed at the base of the toe and a penrose drain is held in place by a Kelly to create a bloodless field. The purpose of the tourniquet is to prevent the phenol from being weakened by any hemorrhage at the time of the procedure. A periosteal elevator is placed between the nail plate and the posterior fold and forced backwards until the invagination is reached and then this is breached. The amount of nail plate to be removed determines the placement of the elevator. The same elevator is then placed under the nail plate and again the invagination is reached and breached. (Figure 4) The nail plate is now loosened both dorsally and plantarly to the nail. An English anvil type nail splitter is placed in the void created by this maneuver and the nail plate is thus split backwards to the posterior nail fold. A beaver handle carrying a No. 61 blade is now placed in the cut made by the splitter and forced under the posterior fold which frees the entire nail that is to be removed. A small hemostat is then employed to roll the loose nail plate out of the sulcus and from under the posterior wall. The best grasp of the nail itself is close to the margin, not the cut itself. At this time a small angled rasp is used to scrape the nail root area, remove any loose soft tissue under the posterior fold and allow for good penetration of the phenol. A very careful drying of the void is now important and is best done with a cotton applicator. Another applicator stick dipped into the phenol only to the first 1/8th inch of the tip, is now used for the chemical ablation. This is now forced into the void and under the posterior fold and left in place for about 30 to 40 seconds. This must be rolled away from the remaining nail plate. A second applicator may be used for another 15 to 20 seconds. (Figure 5). The time interval may depend on the amount of nail plate removed and its thickness. A piece of 1/4th inch sterile gauze is packed into the void and under the posterior nail fold. (Figure 6). The toe is dressed with a folded 2 x 2 gauze square and

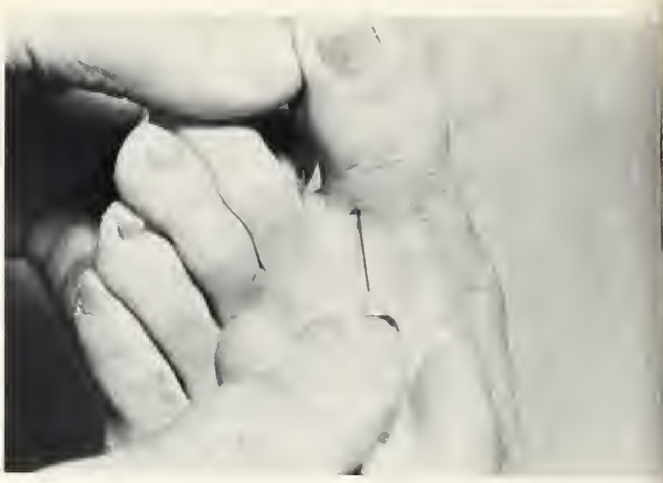

Figure 3a
The initial introduction of the anesthesia is in the lateral side the base of the toe. The medication is placed directl plantarward until a wheal is created under the skin on th plantar aspect.

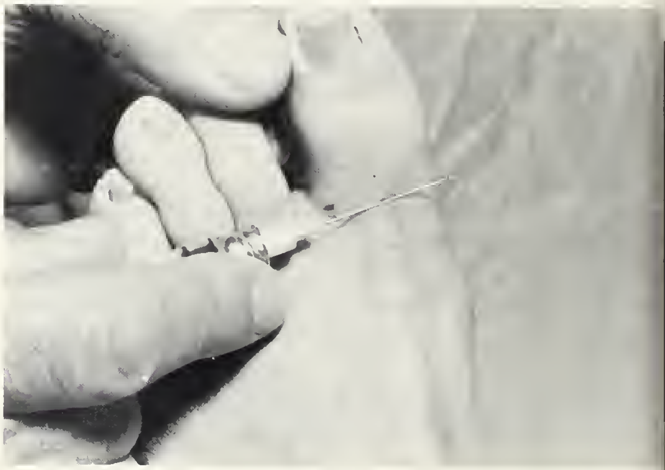

Figure 3b
The dorsal injection is into the same site and is placed unde the extensor Halluucis Longus tendon to infiltrate the nerve a the dorso-medial side of the toe.

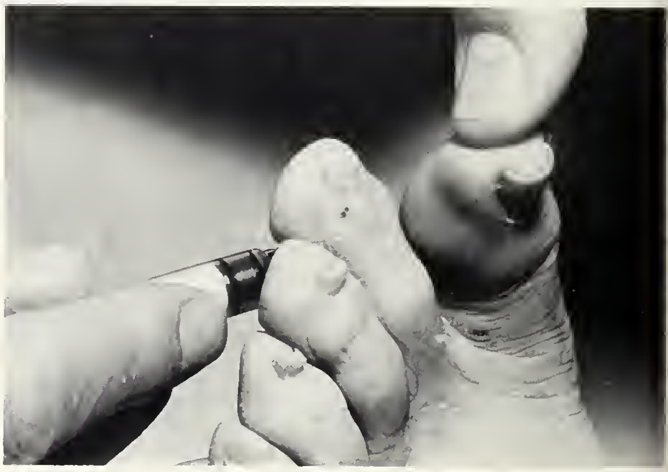

Figure 3c
The plantar block is placed on the lateral side through the wheal placed by the dorsal injection and is directed medialward and superiorly to reach the medial plantar nerve.

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*AmericAid Medical Supply, Inc., 5073 Broadway, New York, New York 10034. Chicago Medical Equipment Company, 300 Wainwright Drive, Northbrook, Illinois 60062. Gill Podiatry Supply Company, 6430 Eastland Road., Brookpark, Ohio 44142. Americaid West Medical Supply Company, 4059 Renata Drive, Las Vegas, Nevada 89103. [R1] Astra Pharmaceuticals, 47 Mellen Street, Farminham, Maine 01701.

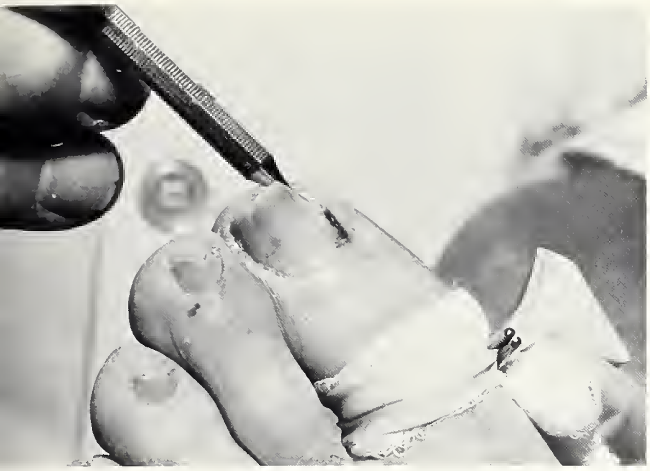

Figure 4
e periosteal elevator must breach the posterior invagination
tween the nail plate and the bed in order to permit the
glish type nail splitter to cut the nail without traumatizing
e nail bed.

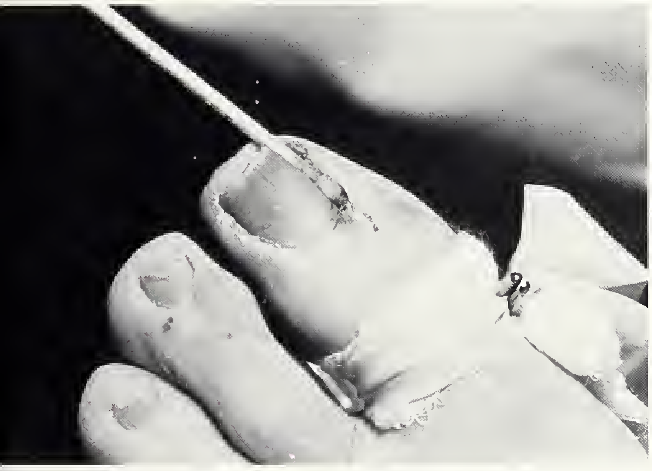

Figure 5
e cotton tipped applicator with phenol is forced under the
sterior nail fold. Care must be taken to wipe away any excess
illage of the medication. Also, in rotating the applicator to
sure good contact with the matrix cells, be sure that the
tation is away from the remaining nail plate.

eld in place with Co-Ban[R2] surrounding the entire digit. igure 7).

Follow-up care consists of removing the gauze pack- g the next day. The void has been maintained by the auze even though the dressing is placed snugly around e toe to control the minor hemorrhage that may be reated in the operation. After removal of the packing in e office on day two, the redressings that are done vice daily by the patient must be loose, so that the xudate will be unimpeded. If tightly dressed, the nail late may close the void and predispose to infection by bstructing drainage. Bathing may be permitted the econd day. Drainage will be for two to three weeks with o discomfort to the patient who may wear closed shoes.

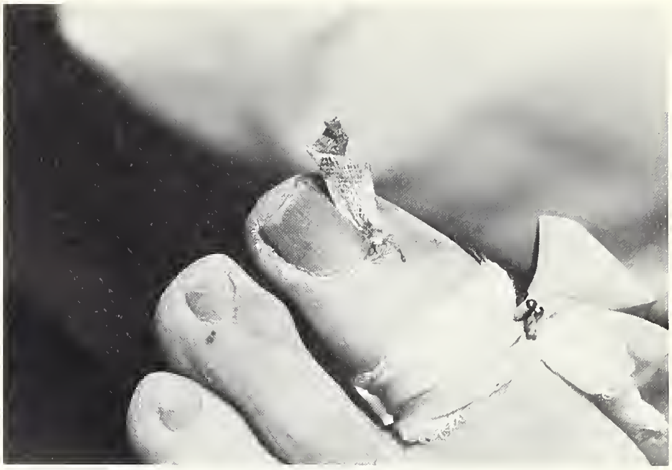

Figure 6
The gauze is packed firmly under the posterior nail fold and into the area of the nail plate that had been avulsed. Note that the skin has not been incised by the 61 beaver knife since it has been placed under the nail fold. The size of the 61 blade is approximately 3/32 of an inch wide.

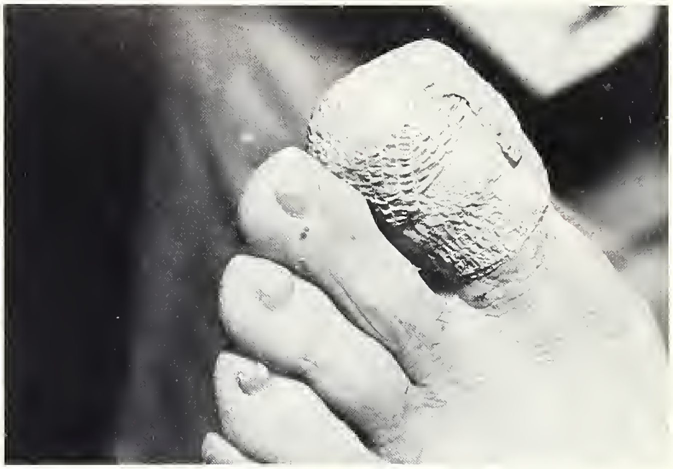

Figure 7
The Co-Ban should be snug to control any minor hemorrhage. A small piece of tape may be used at the base of the toe to prevent the dressing from being lost during walking or in bed.

The office dressing should be done weekly to remove any solidified exudate that will stop good drainage.

The use of sodium hydroxide 10% has been used by one author[23] with similar results and technique. My personal experience has shown little difference in healing time with either the phenol or the sodium hydroxide. The time of drainage depends more on the amount of nail plate removed than on the caustic used. When an entire nail plate is removed, the same procedure is used except that the entire nail plate is loosened and the nail is first split in half by the English anvil nail splitter and the two halves are then rolled away from the sulcu. The rest of the operation is the same.

Acknowledgment

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[2] 3M Orthopedic Products, 3M Center, 225-3S-05, St. Paul, Minnesota 5144.

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AM *Emergency Medicine*

Segmental Proliferation of the Emergency Medical System

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Richard A. Walsh, M.D., F.A.C.S.

Editor:
Marcus R. Engelman, M.D.

Now that Arizona has a funding base for developmen of a statewide Emergency Medical Service system (EMS), we must give careful thought to the application of these resources.

Emergency medical systems, as they were first formally designed and promulgated through the United States are a series of interrelated components—all of which must be strong, effective, and able to work together. These include the local community, the physicians, the hospitals and, of course, the Emergency Medical Service personnel.

No emergency medical system can be successful and survive without the support of the people in the locale for which it is designed. In many cases, especially in the smaller, rural areas, financial support is just not available. This was, in part, the goal of the Federal Emergency Medical Service grants, to supply these areas with adequate funds for setting up an emergency medical system. However, frequently it was overlooked that a substantial financial input must be consistently supplied to keep the system in operation. And, in the communities where volunteers are utilized to man rescue services, an even stronger and more personal community commitment must be made.

From: Arizona Health Sciences Center, Tucson (KVI) and Maricopa Medical Center, Phoenix; (RAW). Reprint requests to Kenneth V Iserson, M.D., Section of Emergency Medicine, Department o Surgery, Arizona Health Sciences Center, Tucson, Arizona 85724.

Physicians are acknowledged to be a critical compo- ent of the emergency medical system. At the higher vels of EMS training, physician contact and guidance e., medical control) must be readily available. The hysicians involved must be knowledgeable, willing to end time keeping up with current EMS protocols, able participate in administrative and Continuing Medical ducation EMS activities, and ready to interact with EMS ersonnel in person and via radio whenever called oon. This, of course, presupposes that the physician is so willing to keep up with the emergency medical skills ecessary for adequate treatment of any patient elivered to his facility.

Hospitals are another component of the emergency edical system. They must be equipped adequately to andle emergency patients. But in addition, they must e willing to supply hospital staff with the needed time nd facilities to interact with and train prehospital care ersonnel. Again, this takes time and commitment— cluding a substantial financial commitment.

Finally, there is the most visible portion of the system, e prehospital care personnel. Begun years ago with hat was considered advanced training at that time— merican Red Cross Advanced First Aid—it has since rogressed to Emergency Medical Technician training, nd even further to the Emergency Medical Technician- aramedic. These personnel have received training hich varied over the years both in the length and type f instruction. However, with the intervention of the ederal Department of Health and Human Services, this aining has been more or less standardized.

Now, however, the country is beset by a proliferation f intermediate levels of emergency medical service aining. Programs take a basic Emergency Medical echnician to varying degrees of training in excess of the asic level in order to fulfill observed local needs. By efinition, these personnel are not being trained to the evel of the paramedic. There is no reasonable limit to e diversity or number of these programs, which ppear to be limited only by the imagination. Likewise, e quality of the training appears to vary across the ame spectrum. Because many of these programs have een aimed at the rural community, which is obviously need of improved emergency medical care in many reas of the country, it may be worthwhile to detail the xperiences of developing an EMS system in our eighboring state of New Mexico.

Starting in early 1972, a large federal grant, which was enewed for several years, was given to the University of ew Mexico to establish an EMS system in the state.

This was at a time when the concept of systems analysis vas being initially applied to the development of EMS, nd to many other areas of medical care. However, the bsence of previous models of statewide systems llowed us (R.A.W.) a great deal of freedom to experi- nent in developing a method for providing the training, upervision, and equipment to the system.

We centralized the teaching at the University of New Mexico. Teams of trained technicians (primarily corpsmen from the military service) who, equipped with a complete set of equipment in a mobile ambulance or trailer, traveled about the state putting on 80-hour EMT training programs.

This was initially quite successful. Working together with the Department of Transportation, who provided ambulances and equipment, many people were trained in the rural areas. These, primarily, became divided into three groups:

1. Private ambulance companies, where the ultimate continuation of the system was to depend upon the financial support of the community through charges of the ambulance system.
2. Fire Departments, which were funded by the city or county, and where financial commitments were made which allowed continuity of personnel and training.
3. Volunteer systems in those communities which were so small that there was little economic base and where financing was primarily by bake sales and the like.

As the sophistication of emergency medicine developed through the mid-1970s, the need for a 480-hour paramedic training became apparent. In Albuquerque, with a population of just under half a million, a two-tier system was developed. The Fire Department, with 480-hour-trained paramedics, provided stabilization of the patient. Transportation was accomplished by private ambulance companies, most of whom also trained their personnel to the paramedic level. However, in the process of doing this, a number of ambulance companies went out of business, and one hospital became the supervisor of all the ambulance functions within the community.

Despite this, there were sufficient funds available through the Fire Department and the private ambulance companies in this urban community so that the level of education and competence has been maintained and the costs have not become an excessive burden on the population.

However, in the rural areas, over a period of time, a number of things became obvious:

The utilization of knowledge and skills was so low in the more rural areas of the state, that within six to eight months there was a fairly rapid drop-off in both cognitive and manual skills among the EMS personnel. In an attempt to overcome this, annual training programs were established, utilizing a previously used 40-hour training module.

Another problem arose at the time that transfer of support from the federal grant to the local community was to occur. In the intermediate-sized communities, the local municipalities were unwilling to make the financial commitment necessary to keep the system afloat. The private ambulance companies did not have sufficient income to support the paramedics' higher salaries, and the resulting turnover in personnel made it extremely difficult to maintain the levels of training and competence that were necessary for an adequate system. So many communities wound up with two well-equipped ambulances, but without the trained personnel to take advantage of it.

In many of the smaller communities, it was found that there was not a sufficient tax base to provide for full-time EMS personnel. This necessitated staying with a volunteer system. As long as there were committed people within the community who were willing to provide their support (and it required a minimum group of nine to twelve persons for this not to become an onerous burden) continuity could be maintained.

An additional problem in many communities was the inability to get a local physician to provide training, supervision, and ongoing involvement with the EMTs. This contributed to the conflict between the nurses who staffed rural emergency departments and the EMTs. In the few cases where a physician was willing to supervise the EMTs, the nursing-EMT interface occurred smoothly and satisfactorily. But without this input, there appeared to be constant conflict between the EMTs and the hospital nursing staff.

Over a period of ten years, as funding was shifted to the state, it became evident that several things were necessary in order to provide continued level of competence and service in the Emergency Medical System.

1. There had to be a community commitment, generally through a fire department, in order to provide an established and continuous level of training and confidence within the community. If the community was not willing to commit funds, to provide positions, and to support training needs, then all efforts were going to be wasted.

2. If no physician within the community was willing to participate by interfacing with, accepting calls from, and taking responsibility for the EMTs (regardless of their levels of training) continuation of a significant level of prehospital care within the community could not be maintained.

3. In the small rural communities, where volunteers functioned in a basic EMT system, burnout occurred. It was often extremely difficult to get replacements for personnel within these communities.

This experience indicates that emergency medical systems are just that—systems. Suboptimization of any part of the system leads to a breakdown of that system. Or, in other words, a chain is no stronger than its weakest link. It was obvious, that to provide an adequate EMS system, identification, notification, transportation, EMT service and care, physician supervision, and hospital participation were all equally necessary.

Well-trained EMTs and paramedics, and adequate ambulance were provided. But without the physician and hospital support and coordination, the system failed. We must, in developing rural EMS in Arizona, begin not with one segment of the system, but rather deal first with the commitment of each community to the establishment and continuity of the entire system. If a community commitment—financial, personal, and professional—is not there, then an EMS system will not function. Finally, and only after intensive evaluation of the community's commitment, one may proceed to develop the training programs and resources to create an EMS system.

Piecemeal approaches to emergency care provision in rural areas have all too often been a disastrous road. If we have learned anything in the last ten years, it is that emergency medicine is a system and must be dealt with as a system. It is not links that can be implemented individually without the assurance of failure, enormous waste of funds and energy, and the subsequent disillusionment of very fine, caring people.

Neurology

arbon Monoxide Poisoning:
reatment with Hyperbaric Oxygen

ichard A. Thompson, M.D.

ditors:
. Michael Powers, M.D.
ames L. Frey, M.D.
awrence Z. Stern, M.D.

Carbon monoxide poisoning[1] is usually associated ith an altered state of consciousness or coma. omatose patients may die because of respiratory ilure. If death is not immediate, coma may persist for ours or days with slow improvement. Recovery after oma is usually associated with neurological abnor-alities including memory disturbances, behavioral isturbances, paralysis, aphasia, blindness, abnormal ovements, and Parkinsonian syndromes.

Lesser degrees of intoxication may not produce coma but are associated with headache, drowsiness, confusion, vertigo, and erythema. Even though the patient may recover initially, he may later develop persistence of mental and neurologic changes. The patient may develop within a few days or possibly two or three weeks, or rarely five to six weeks, symptoms of disorientation, confusion, restlessness, and a variety of neurologic signs including aphasia, agnosia, apraxia, incoordination, seizures, loss of motor control, rigidity, Parkinsonism, and psychiatric changes. There have been cases where the causal relationship of carbon monoxide poisoning was not initially appreciated because of the time interval.

It is widely recognized that treatment with 100% oxygen by mask for one to four hours will in general reduce the carbon monoxide in the blood to safe levels. However, certain patients with carboxyhemoglobin of 25% or more on presentation, even though treated in this manner, will have later development of neurologic symptoms. In the experience of several other centers,[2,3] neurologic sequellae do not develop in patients treated initially with one or two hyperbaric oxygen treatments of 2.5 atmospheres absolute for 60 minutes per treatment.

It has in addition been reported that recurrence of neurologic symptoms after an interval of relative improvement would also respond to hyperbaric oxygen treatment.[4,5] Only a few case reports of hyperbaric oxygen treatment are in the literature where there has been a delay in treatment of days to weeks.

The following is a case report of a patient who responded to hyperbaric oxygen treatment nearly two months after carbon monoxide intoxication.

Case Report

The patient is a 42-year-old man who in a state of fatigue drove his car into his garage and fell asleep with the motor running. This was not considered to be a suicide attempt. It was estimated that he was exposed to exhaust fumes for one hour and forty-five minutes. Paramedics were summoned and he was treated with oxygen and hospitalized. He became awake one hour after he was found. He had extreme memory impairment and myoclonic movements of the right arm, a shuffling gait, and a tendency to drag the right foot. Subsequently, he had a general improvement in all functions but had persistent myoclonic movements of the right arm and leg, persistent weakness of the right arm and leg, and persistent poor coordination of the right arm.

On the day of his intoxication he was found by paramedics at 0230 hours and started on oxygen inhalation by mask. At the hospital at 0255 hours his carboxyhemoglobin was 42.6%. At 0340 hours it was 29.5%. At 0630 hours it was 8.5%. By 1150 hours it was 2.5%.

Subsequently he showed slow improvement but at two months was still unable to return to work, could not remember dates and times, and could not remember

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rom: Barrow Neurological Institute, St. Joseph's Hospital and ledical Center, 350 West Thomas Road, Phoenix, Arizona.

where common items were in his house; for example, coffee cups. He had considerable retrograde amnesia of events prior to the poisoning, including the marriage of his daughter four months previously. He could not remember a story line of a movie or television program. He could not remember his work activities and generally became inactive and withdrawn.

His past medical history revealed that he had been intermittently hypertensive and at times treated with antihypertensive medication including Catapres and Dyazide.

Neurologic examination on admission to the Barrow Neurological Institute revealed marked memory impairments. WAIS full scale IQ was 94 with a verbal scale IQ of 99 and performance scale IQ of 89. His Wechsler Memory Quotient was 81. He demonstrated marked short-term memory impairment. He could not do simple arithmetic or spelling. There was minimal incoordination of the right arm and hand but no abnormal neurologic signs were present. His general physical examination only revealed a blood pressure of 160/105; otherwise he was normal.

Electroencephalogram revealed generalized slowing of background rhythms. There were no focal or paroxysmal abnormalities.

CT scan revealed bilateral, symmetrical low density areas in the globus pallidum characteristic of carbon monoxide poisoning.

He was started on a series of hyperbaric oxygen treatments, totalling twenty treatment sessions of 2.5 atmospheres absolute at 90 minutes per session. He did not begin to show any improvement until the fifth treatment and subsequently had improvement that persisted and increased throughout the remaining fifteen treatments.

Repeat psychometric testing done three days after completion of hyperbaric oxygen treatments revealed dramatic improvement. The family noted that he was more alert and seemed more like "himself." His concentration was improved; he could remember a story line of movies and television. He had become more spontaneous in discussions and had increased interest and motivation. The right arm weakness and poor coordination were markedly improved. His full scale IQ had increased to 104 from 94. His verbal IQ increased to 108 from 99 and his performance scale IQ had increased to 99 compared to 89. His Wechsler Memory Quotient had increased to 93 compared to 81 prior to the examination one month previously.

Discussion

This represents a case report of a patient who was observed to have a very satisfactory response to hyperbaric oxygen treatment two months after the initial exposure. During the month of daily treatments he had progressive and remarkable improvement in clinical functioning. As noted above, the effect of hyperbaric oxygen treatment of the acute carbon monoxide poisoning victim is well recognized. The effectiveness of hyperbaric oxygen treatment in the chronic state has only recently been investigated.

Carbon monoxide has a high affinity for hemoglobin (in excess of 200:1) and in addition probably an even higher affinity to myoglobin and other iron-containing hemoproteins, especially in the tissues with high metabolic rates. Carbon monoxide inhibits oxidative respiration by competing with oxygen receptors in the cytochrome system. Presumably this affinity persists even after the patient has shown signs of clinical recovery because of the high affinity of carbon monoxide for the cytochrome system.[2] It is presumed that hyperbaric oxygen treatment in the chronic state produces a high oxygen tension in the respiratory systems of tissues and gradually displaces carbon monoxide from the cytochrome system, allowing it to function in a normal state.

It is recommended that hyperbaric oxygen treatment be administered once or twice for carboxyhemoglobins initially of 25% or more.[2] It has been noted in other centers previously mentioned that late or delayed complications of carbon monoxide poisoning do not occur if patients are treated upon presentation under these circumstances. Longer treatment periods may be necessary to correct the neurologic deficiencies when there is a greater time delay between the intoxication and persistent or recurrent neurologic symptoms.

A hyperbaric oxygen treatment facility has been in operation at the Barrow Neurological Institute of St. Joseph's Hospital and Medical Center since 1970. In addition to treatment of carbon monoxide poisoning, hyperbaric oxygen treatment is available and recognized by both the Undersea Medical Society and Medicare for the treatment of other conditions including chronic refractory osteomyelitis, chronic radiation necrosis of bone and soft tissue, crush injuries, acute cyanide poisoning, acute refractory cerebral edema, decompression sickness, air and gas embolization, refractory soft tissue infections and fungus infections, gas gangrene, and enhancement of healing of problem wounds.

Acknowledgment

Appreciation is expressed to Herbert Collier, Ph.D. for the psychometric examinations.

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Oncology

drenal Cortical Carcinoma

ohn F. Kessler, M.D.

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Adrenal cortical carcinoma is a rare tumor with an nnual incidence of one case per 1.7 million popu- tion.[1] These neoplasms arise from any of the three lrenal cortical layers and can be classified as functional nonfunctional depending on whether there is an sociated endocrine syndrome.

inical Features and Diagnostic Evaluation

Most patients present in the fourth or fifth decade of e, although the reported age range is five months to 75 ears of age.[2-6] Overall, the sexes are equally affected, ith females accounting for about two thirds of the nctional tumors.[3] The presence of a secretory syn- rome may account for earlier diagnosis in females.

The most common clinical presentation is an bdominal fullness or mass found by the patient or ysician in 36% to 54% of cases.[2,3,6] An additional one ird of patients present with manifestations of meta- atic disease.[6] Functional tumor syndromes are the itial manifestation in one fifth to one half of pa- ents.[2,3,5,6] Cushing's syndrome is the most common ndocrine abnormality occurring in 60% to 80% of inctioning tumors. About one third of these Cushing's ases have associated virilization characterized by ecrease or cessation of menses, hirsutism, acne, deep- ning of the voice, clitoral enlargement, or male pattern aldness. Virilization alone occurs in 10% to 30% of ecretory tumors and feminization manifested by ynecomastia, testicular atrophy, and impotence, in ten ercent.[2,5,6] The finding of increased virilization in males nd feminization in females is recognizable in children, ut is probably underestimated in adults. Less commonly encountered disorders include hypertension and hypokalemic alkalosis associated with hyperaldosteronism or increased 11-deoxycorticosterone, and, rarely hypoglycemia.[2,7,8] Occasional patients will present with fever, weakness, lethargy, or changes in weight.

The diagnostic workup includes endocrine evaluation, diagnostic imaging, and confirmation by pathologic evaluation of tissue. The location of the adrenals in their retroperitoneal position adjacent to the kidneys and surrounded by fat makes them readily evaluable by computer-assisted tomographic (CT) scanning. The demonstration of large tumor size, central necrosis, or the finding of metastatic disease aid in distinguishing these malignant tumors from benign adenomas.[9] Sonography will reveal disease in 86% and angiography in 95% to 100% of cases.[3,6] While usually normal, a barium contrast upper gastrointestinal series can reveal displacement of the stomach by a mass in about 40% of studies.[6] Intravenous pyelography will be abnormal about 60% to 80% of the time, typically revealing downward kidney displacement or distortion of the calices.[3,6] Chest radiograph reveals pleural or parenchymal pulmonary disease in a small number of patients.[6] Adrenocortical isotope scanning is time consuming, and expensive and offers no advantage over CT scanning in the detection of adrenal masses.[10] (See Table 1)

Appropriate endocrine evaluation should be performed in patients with suspected endocrine syndromes. Initially, 17-hydroxycorticoid and 17-ketosteroid determinations should be made on a 24-hour urine specimen. Elevated 17-ketosteroid levels greater than 20 mg/gm creatinine or increased serum dehydroepiandrosterone sulfate levels are suggestive of a malignant adrenal tumor.[4,5] Suspected Cushing's syndrome patients should also be evaluated after dexamethasone where nonsuppression of 17-hydroxycorticoids will be apparent if that syndrome is present. When necessary, low or undetectable ACTH levels aid in distinguishing adrenal carcinoma from ACTH-producing tumors resulting in Cushing's syndrome. Feminization in males is the result of andro-stenedione secretion and subsequent conversion to estrogen by the liver. Increased 17-ketosteroids are found in this situation also.[4]

In a study of 58 patients with adrenal tumors evaluated by Bertagna, carcinoma was more likely than adenoma in the presence of shorter interval between onset of symptoms and diagnosis, higher 17-ketosteroid levels, and larger tumor size. A number of routine chemistries, blood counts, 17-hydroxycorticoid levels, baseline serum cortisol, and response to dexamethasone or metyrapone were not helpful in discriminating adenoma from carcinoma.[5]

Carcinoma is suggested pathologically by capsular or venous invasion, nuclear and cellular pleomorphism, frequent mitotic figures, and the presence of metastases.[3,5] Tissue should be obtained for histologic evaluation in all cases.

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Treatment

Surgery remains the only potentially curative treatment modality for this cancer. Unfortunately, the majority of patients present with either locally advanced or metastatic disease.[3,6] About 5% to 10% of cases will present with disease confined to the adrenal gland.[3,6] *En bloc* excision has been the accepted surgical approach. The results of surgery are difficult to assess from available series. The high mortality encountered in earlier reports was likely due to lack of adequate steroid replacement.[11] In a recent review of M. D. Anderson's experience, 35 patients had seemingly complete surgical resection of tumor. Five of these patients are alive at 13 months to 10 years of follow-up. Eighteen had recurrence of disease within 2 years after surgery while later recurrences (up to 10 years postoperatively) were noted in twelve patients.[3] In a recent series of children with adrenal carcinoma, 12 patients were surgically treated. Seven patients had known metastases at resection and six had locally advanced tumors. Five of these patients, one of whom had pulmonary metastases, were alive at 9 months to 5 years. Eight patients died; seven had pulmonary metastases and one died at 19 years of a second malignancy.[12] In local or locally advanced disease, surgical resection appears capable of long-term disease control or possibly even cure in a small number of patients.

There are no conclusive data regarding adjuvant therapy after surgery. Of five patients receiving adjuvant radiotherapy at M. D. Anderson, two are alive at 5 and 13 years, two died after disease-free intervals of 3 and 5 years, and no data were reported for the fifth.[3] No conclusions can be drawn from this small, uncontrolled experience. Although mitotane (o,p'-DDD) has not been well studied as an adjuvant treatment, its low objective response rate and significant toxicity would appear to make it unsuitable for this purpose.

Although there are few details on the use of radiotherapy in advanced or recurrent disease, several published reports consider it ineffective.[13-15] Modest responses have been noted in 20% to 40% of treated patients in other series.[3,6] For pain palliation, 3000-4000 Rads over 2 to 3 weeks has been recommended.[16] In a few patients, healing of bone lesions and alleviation of intestinal obstruction was noted. It would appear reasonable to offer radiotherapy for specific palliative purposes.

The drug mitotane was developed as a therapeutic tool after the discovery that similarly structured insecticides caused adrenal atrophy. Its mechanisms of action involve a toxic effect on mitochondria and inhibition of steroid synthesis.[17,18] Storage of this drug occurs in adipose tissue and levels can be detected in plasma up to 8 months after stopping therapy.[17] The reported effectiveness of mitotane must be interpreted with caution because of the various response criteria used. A reduction in steroid excretion can be expected in 70% to 80% of patients and tumor regression (usually minor) occurs in about one third of treated individuals.[13,19]

Table 1
Initial Diagnostic Imaging in Adrenal Cortical Carcinoma

Procedure	Percent with Abnormal Findings
Chest radiograph	14%
Intravenous pyelogram	60-80%
Upper gastrointestinal series	40%
Ultrasonography	86%
Computed Tomography	100%
Angiography	95-100%

Modified from Nader[3] and Didolker[6]

Comparable tumor response occurs in both functiona
and nonfunctional tumors. Complete and partia
responses have been observed in a few patients bu
there does not appear to be a major effect on diseas
course or survival.[5,6,18]

The recommended initial dose of mitotane is 2 to
grams daily in divided doses. Because of the frequen
occurrence of gastrointestinal toxicity, treatment wit
lower initial doses with gradual escalation has bee
suggested.[17] Combining mitotane with cellulos
acetylphthalate may decrease gastrointestinal relate
problems which are otherwise present in 80% o
patients.[20] Additional frequent side effects includ
neuromuscular disorders and skin rash.[4,17,18]

Full glucocorticoid replacement should begin simultaneously with mitotane. Additionally, because o
mitotane's persistence in the body after discontinuation
steroid replacement should be continued until recover
of adrenal function has been demonstrated by ACT
stimulation.

Aminoglutethamide may be useful for treating hypercorticolism, but antitumor activity has not been objectively demonstrated. Experience with cytotoxic agents i
adrenal carcinoma is minimal. Responses have bee
reported with a few standard agents and with a smal
number of drug combination and investigationa
agents.[3,21] As with other rare tumors, a multiinstitutiona
trial would be required to evaluate sufficient patients t
detect objective antitumor activity.

Prognosis in this disease remains poor. In the 77 patients reported by M. D. Anderson, the median surviva
was less than 2 years with 30% surviving 5 years and 10%
surviving 10 years after diagnosis.[3] There is no differenc
in survival between patients with functional and patient
with nonfunctional tumors.[3,6] Most of the deaths wer
related to sepsis or respiratory insufficiency.[6]

Summary

In summary, adrenal cortical carcinoma is a rar
neoplasm often accompanied by hormonal disorder
including Cushing's syndrome, virilization, o
feminization. Overall prognosis is poor and i
determined primarily by the natural history of the
disease. Rarely, surgical cures are possible with local o
locally advanced disease. Radiotherapy offers palliative

Table 2
Features Suggestive of Adrenal Malignancy (see text)

Cushing's Syndrome with:
a) Large tumor size
b) Short interval from onset of symptoms to diagnosis
c) Elevated urinary 17-ketosteroids
Virilization or Feminization Syndromes
Adult with Palpable Mass and
a) CT scan demonstrating adrenal tumor with central necrosis
b) Elevated 17-keto and 17-OH corticoids
c) Weight loss or fever

odified from DeVita[22]

nefits, while mitotane can be used to achieve provement in hormone effects, with occasional jective tumor regression. The roles of amino-utethamide and cytotoxic chemotherapy are less well fined and deserve further evaluation.

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BRIEF SUMMARY
PROCARDIA® (nifedipine) **CAPSULES** For Oral Use

INDICATIONS AND USAGE I. Vasospastic Angina: PRDCARDIA (nifedipine) is indicated for the management of vasospastic angina cunfirmed by any of the following criteria 1) classical pattern of angina at rest accompanied by ST segment elevation 2) angina or coronary artery spasm provoked by ergonovine or 3) angiographically demonstrated coronary artery spasm In those patients who have had angiography the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina provided that the above criteria are satisfied PROCAROIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed e g where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and or adequate doses of beta blockers

II. Chronic Stable Angina (Classical Effort-Associated Angina). PROCAROIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and or organic nitrates or who cannot tolerate those agents

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment especially in patients with compromised left ventricular function or cardiac conduction abnormalities When introducing such concomitant therapy care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS Known hypersensitivity reaction to PROCARDIA

WARNINGS Excessive Hypotension: Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated occasional patients have had excessive and poorly tolerated hypotension These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers

Severe hypotension and or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to be due to the combination of PROCAROIA and a beta blocker but the possibility that it may occur with PROCARDIA alone with low doses of fentanyl in other surgical procedures or with other narcotic analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated the physician should be aware of these potential problems and if the patient s condition permits sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery

Increased Angina Occasional patients have developed well documented increased frequency duration or severity of angina on starting PROCARDIA or at the time of dosage increases The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate or from increased demand resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina probably related to increased sensitivity to catecholamines Initiation of PRDCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PRDCARDIA initiation It is important to taper beta blockers if possible rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure. Rarely patients usually receiving a beta blocker, have developed heart failure after beginning PRDCARDIA Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS General: Hypotension: Because PROCARDIA decreases peripheral vascular resistance careful monitoring of blood pressure during the initial administration and titration of PROCAROIA is suggested Close observation is especially recommended for patients already taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema: Mild to moderate peripheral edema typically associated with arterial vasodilation and not due to left ventricular dysfunction occurs in about one in ten patients treated with PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuretic therapy With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions. Beta-adrenergic blocking agents (See Indications and Warnings) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCAROIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers The average increase was 45% Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured digitalis toxicity was not observed Since there have been isolated reports of patients with elevated digoxin levels it is recommended that digoxin levels be monitored when initiating, adjusting and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis mutagenesis impairment of fertility When given to rats prior to mating nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity in rats embryotoxicity in rats mice and rabbits and abnormalities in monkeys

ADVERSE REACTIONS The most common adverse events include dizziness or light-headedness peripheral edema nausea weakness headache and flushing each occurring in about 10% of patients transient hypotension in about 5% palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication Additionally the following have been reported muscle cramps, nervousness, dyspnea nasal and chest congestion diarrhea constipation, inflammation, joint stiffness, shakiness sleep disturbances blurred vision difficulties in balance dermatitis, pruritus urticaria, fever sweating chills and sexual difficulties Very rarely introduction of PRDCARDIA therapy was associated with an increase in anginal pain possibly due to associated hypotension

In addition more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients It remains possible however, that some or many of these events were drug related Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare mild to moderate transient elevations of enzymes such as alkaline phosphatase CPK LOH, SGOT and SGPT have been noted and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy is uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis possibly due to PROCAROIA therapy has been reported twice in the extensive world literature

HOW SUPPLIED: Each orange soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine PROCARDIA CAPSULES are supplied in bottles of 100 (NOC 0069-2600-66) 300 (NDC 0069-2600-72) and unit dose (10x10) (NOC 0069-2600-41) The capsules should be protected from light and moisture and stored at controlled room temperature 59 to 77 F (15 to 25 C) in the manufacturer s original container

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Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).

for the varied faces of angina

Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
2) Angina where the clinical presentation suggests a possible vasospastic component.
3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

PROCARDIA®
(NIFEDIPINE) *Capsules 10 mg*

Please see PROCARDIA brief summary on adjoining page.

Radiology

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A 3-year-old girl presented with swelling, erythema
nd tenderness of the left eye. Two years previously, a
ght eye condition was diagnosed and treated. On a
ain film of the skull, calcifications were seen in both
bits, (Figure 1).

What is the most likely diagnosis?
What is the prognosis?
What additional study might be helpful at this time?

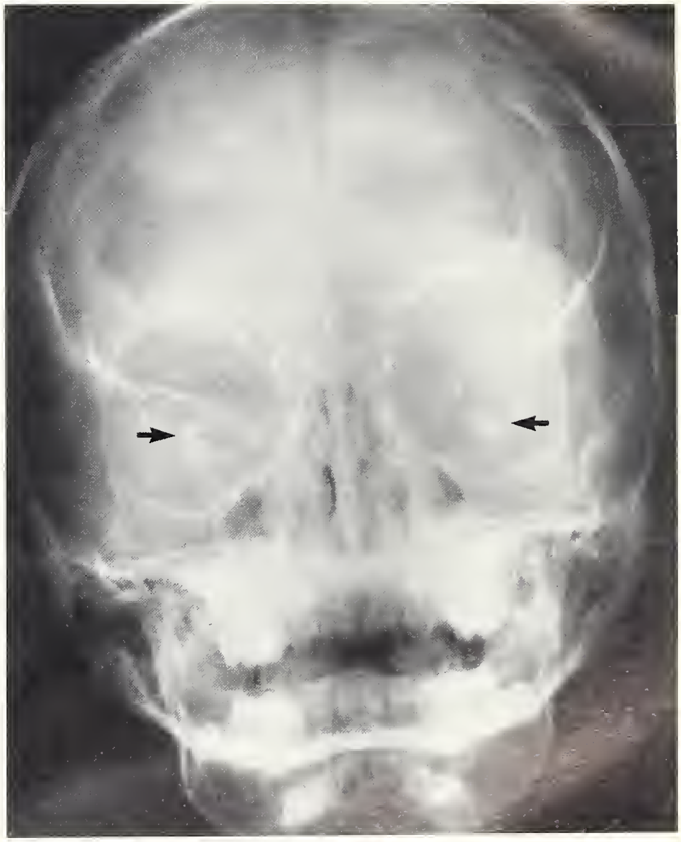

Figure 1
Arrows show calcifications in both orbits.

Continued on Next Page

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Answer: Bilateral Retinoblastoma

Although direct visual examination remains the best means of diagnosing retinoblastoma, the demonstration of intraocular calcification is strong supporting evidence. The plain skull film in Figure 1 shows orbital calcifications, which are seen in up to 75% of patients with retinoblastoma. Radiation therapy, as was used in this case, increases the likelihood of calcification, secondary to necrosis and contraction of the tumor mass. Included in the differential diagnosis are advanced retrolental fibroplasia and astrocytic hamartoma.

Presenting signs and symptoms of retinoblastoma depend upon the time of diagnosis. Leukokoria (white pupillary reflex), strabismus and a red eye are the most common early signs of the disease. Orbital mass, proptosis, blindness, failure to thrive, seizures, irritability and coma are seen in more advanced stages. The tumor arises from the nuclear layer of the retina, usually from multiple sites, and is bilateral in 20% of cases. It extends as a fleshy mass into the vitreous cavity, and can extend out of the globe along the optic nerve.

Surgery, radiation therapy and chemotherapy are the mainstays of retionblastoma therapy. The choice of treatment depends on the tumor size, location and degree of invasiveness. Disease which has spread beyond the confines of the globe approaches 100% mortality, whereas with more limited tumor, five year survival can be as high as 92%. Therefore, CT scanning provides an invaluable tool in planning treatment and determining prognosis. Along with direct visual examination, it can contribute vital information regarding recurrence. The CT scan on our patient (Figure 2) reveals the bilateral retinoblastomas, with marked enlargement of the left globe, but no involvement of the left optic nerve or extension beyond the orbit.

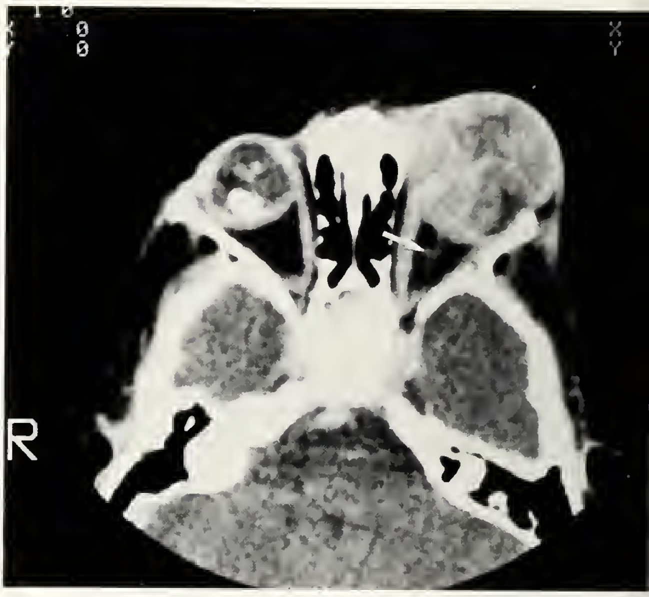

Figure 2
CT scan shows enlargement of the left globe, and calcificatio in both globes. Left optic nerve (arrow) is normal.

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Rx Of Medicine

rom Clay Tablets to lectronic Publications: he History of Medical Books

rtha R. Almagro

Looking in retrospect, it is certainly astounding how e written word was able to survive five millennia since esopotamian clay tablets were carefully wrapped and ored. More dangerous to books than nature's ravages ere man-made hazards of war, invasion, looting, rsecution and simple carelessness, as when Julius esar, burning the Egyptian fleet in Alexandria harbor cidentally set fire to the great library where the olemies had collected the scientific and literary eritage of Greece. Rome with its libraries was swept by e in Nero's time (64 A.D.), again in Galen's day (2nd ntury), and once more when barbarians sacked this y in the 5th century. Raiding Danes and Normans equently burned monastery libraries in Western rope during the Dark Ages, and in Spain, Moors and hristians laid waste each other's cities and literary easures.

How books were made and preserved, outliving dynasties and empires, surviving holocausts, pillage and natural disasters is here reviewed in what can be considered the epic adventure of the world's greatest cultural revolution. Our interest will be focused on the development of medical books, which are as old as civilization itself.

Dating from the 5th millennium B.C. are the medical books of ancient Sumer and Akkadia, written in primitive idiographs, in vertical lines from right to left, often using parts of the body for words. To cite an example, a breast and abdomen will represent a pregnant woman. The first writers preserved words by using a stylus on a soft clay surface. Each tablet was the equivalent of a page of text, and to keep the pages in order, the bottom of each tablet bore the first word of the next, a practice still maintained in many legal and official manuscripts today. The tablets were hardened by baking, and an overlayer of clay was applied to protect the writing. The collection of tablets forming a volume was kept together in a clay jar and the jars placed on shelves.

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The library catalogue was engraved on the wall. The first of history's recorded book collectors was King Ashurbanipal II, who established a library of 25,000 such tablets in 7th century B.C.

Unique in the history of printed words was the discovery of the Ebers Papyrus. During the winter of 1872-73; Professor Georg Ebers, of Leipzig University was exploring the necropolis of Thebes, when a native brought him a tin box containing a papyrus in perfect condition. Written approximately in 1550 B.C., during the reign of Amenhotep I, the Ebers Papyrus contains prescriptions dating back to 3700 B.C. Papyrus, the Nile reed, was converted into the material of books, by placing the stems in layers lengthwise and crosswise, then pressing and polishing the surface smooth with abrasives. Writing was done in columns, a pattern that survives in printed matter to this day. The roll itself was continuous for an entire volume. The text, written in black with headings in red, was in the customary hieratic script, the Egyptian equivalent of cursive writing.

One of the marvels in the history of books is the preservation of the "Corpus Hippocraticum" a compilation of Hippocrates' writings and those of his disciples collected in Alexandria, its library being the publishing center for the ancient world. Although no manuscript approximating his time has been found yet, the Corpus includes even his students' corrected notes. Modern scholars acknowledge 18 treatises to be from the hand of Hippocrates or his closest disciples. The oldest copies now extant date from the 10th to 12th centuries, and it is believed that the originals from which these copies were made may have come to Europe by one of three different routes: first, the widely disseminated Alexandrian edition before the destruction of the libraries; second, by way of Byzantium, when the patriarch and physician Nestorious was expelled from Constantinople for heresy taking with him the Hippocratic writings to Antioch in Arabia, and finally Egypt where he died, and third, that the Corpus might have been brought to Rome during the period of Athens' decline.

The Roman Empire's most famous physician, Galen, wrote or dictated some 400 works. A native of Pergamum, he wrote in Greek, probably on parchment cut into pages, and bound with leather, wood or other protective covers. Parchment, by the way was developed when the Ptolemies banned the export of papyri, thus cutting the supply of writing material for the competing libraries in Pergamum. This prompted the development of "pergamentum" (hence parchment), from sheep and goat skin; also vellum from calves.

When Rome was sacked by the Goths in 410 and again in 455, its two great libraries disappeared. By 576 virtually the entire European heritage of books had been destroyed. For the next six centuries monasteries were the sole repositories of books. A period we might call "The Monastic Interlude."

Works by Hippocrates and Galen, along with a vast collection of classical manuscripts were carefully preserved by Cassiodorus Aurelius, a remarkable Roman o Greek lineage, who at age 60 retired to monastic lif installing the first of the monastic scripteria. St. Benedic modeled his Monte Casino scriptorium after that of hi friend Cassiodorus. Copies of Hippocrates and Gale made at Monte Casino became the first text of th monastery's hospital and medical schools. Th monasteries encouraged gifts and bequests of book and a manuscript was a customary gift from an enterin novice. Confusion and error crept into the manuscript as semiliterate scribes understood little of what the were copying. Also dividing a manuscript among sever copyists and having one monk read aloud while other transcribed, augmented the possibilities of error Copying was frequently assigned as a penance regardless of writing skills.

The most popular medical book of the Middle Age was a treatise on hygiene written in verse, the *Regime Sanitatis Salernitanum*. It bears the name of Salerno Europe's first and most famous medical school founde in the 9th century. The author of the book is unknown although there are two strong candidates, Spain' Arnold of Villanova and Maiano de Maineri, a Milanes physician.

The mainstream of Greco-Roman learning returne to Europe via Spain. The second oldest university afte Salerno was formed in Moorish Spain around the librar of Khalif Al-Hakem of Cordova. The continuou scientific and literary tradition maintained by the Arab from antiquity, enriched Europe's monastic scholarshi with a flood of translations, compilation and commentaries by Moslem and Jewish scholars. Christian Toled succeeded Moslem Cordova as the center of a brillian period of translation and exchange. It was here that gifted Italian, Gerard of Cremona, accomplished th enormous task of translating Avicenna's Cannon, the medical authority of the Arab world for a century.

Avicenna began his medical writings at 16, and at hi death in 1037 he had produced a great body of work including the monumental five-volume organization o Hippocratic and Galenic doctrine, Aristotelian biologic concepts and Oriental therapies.

Rival centers of learning were at Palermo and Monte Casino, where Constantinus Africanus diligently turne Arab medical works into Latin. At Palermo, the Holy Roman Emperor and German King of Sicily Frederick II gathered scholars of all languages at his court to make translations. By the 13th century the manuscript trade was at its peak. Learning from texts as well as from lectures was in full swing, and universities kept strict control of texts.

Students might rent a book at fixed fees, whole or by chapter, from licensed scribes and manuscript leaders called stationaries: four pages rented for four denarii, two pages for two denarii. A denarius was worth about ten cents. Stationaries were required by the university to repossess the books of students who died or left school. Even royalty enjoyed no special privileges when it came to books: King Louis XI of France, wishing to borrow a opy of Rhazes from the Paris Faculty of Medicine, was bliged to leave a deposit, and provide a nobleman as osigner of his pledge to return the book.

Now enters the invention of the movable type, ithout a doubt the single most important event in the ultural history of civilized man. By the time of its ppearance, man had been able to write for some 4000 ears, but a trained scribe could produce with pen and ik only about 30 pages a day, and these were subject to iac curacies.

Crude printing processes were already known. Block ooks had been printed six centuries earlier in the rient. In China and Korea there was a kind of crude novable type made from molds, but to produce books wiftly, inexpensively and in large quantities, two roblems needed solving: inexpensive writing materials o replace the costly parchment, and a cheap nechanical substitute for hand copying.

The first problem was solved when the Chinese apermaking technique was learned through Chinese risoners captured by Arabs. When Spain recovered erritories from the Moors, it also acquired paper mills hat provided the dissemination of paper all through urope. Vellum, the best grade of parchment made from eal skins, was only used for special books.

The second problem had by far a much more dramatic olution proving to be the most decisive achievement of ny period. When printing from movable type was first aunched in Europe it was opposed by many who laimed that the crudely shaped type was no match for andwritten illuminated manuscripts and that paper vould never last as long as parchment. But Johann utenberg's invention proved otherwise.

Although traditionally the invention of printing is redited to Gutenberg, there is however, no extant iece of printing which satisfies the majority of critics. The famous 42 line Bible known as Gutenberg's of which he Mazarin Library copy bears the rubricator's date of 1456, is thought by most bibliographers to have been printed by Johann Fust and Peter Schoffer, whose Mainz psalter, printed in 1457, is the first dated European book. The importance of Gutenberg is not that he was the first o print; his fame rests on the fact that he was eminently uccessful. His printed pages had the clarity and beauty of the best manuscript writers. The combination of beautiful types and fine presswork made possible the acceptance of the printed books as the long-sought means of increasing and speeding the spread of knowledge. It was out of man's craving want for knowledge that the printing industry was inspired. The printing press was eagerly accepted in the 15th century and printers were much sought after. To cite a good example, when the English parliament in 1483 passed a law excluding foreign artisans from settling in England, printers were specifically exempted.

So rapid was the spread of printing, that by 1500, a press was at work in every major European country except Russia. In a period of roughly 50 years following the invention of printing, more copies of books were made than had been copied throughout several preceding centuries. Also that books were cheaper can be attested by a letter of the bishop of Aleria in 1467 to Pope Paul II, in which he commented that "books were one-fifth their former price."

A remarkable group of printers-scholars were responsible for this intellectual revolution. A man whose name and fame shall endure as long as the literary world exists is Aldus Manutius who organized a great printing house in Venice. His motto "Festina lente" ("make haste slowly") and the device of the "Dolphin" and the "Anchor" were intended to symbolize "quickness of execution combined with firmness of delineation." The principles of the Aldine influence became the standards of all later printers.

Nicholas Jenson, who published only a few medical books, worked for a time with Aldus, and he is credited with the creation of the Roman type. He was the foremost printer of Paris.

The Giunta was a family of printers who operated in the 15th, 16th, and 17th centuries in Italy, Spain and France, publishing editions of Galen, Celsus and Hippocrates. William Caxton was the first English printer. He founded his press in Westminster in 1476, and before his death had published about one hundred volumes. Johann Froben, a great printer and publisher, ranked with Aldus in the extraordinary quality and precision of his works. He is to be credited with the discovery of Hans Holbein, one of the great painters of Germany.

In Paris, the Estienne family of scholarly printers, were representatives of the golden age of typography. They sought accuracy as well as beauty, and they used to hang proofsheets in the windows of the shop, inviting students of the University, as they passed by, to criticize them, offering a reward for the discovery of errors in them.

The first known bit of medical printing is the famous "Mainz Kalendar" for the year 1457; the only remaining copy is kept at the Bibliotheque Nationale in Paris.

The printing of medical books was not begun until some years after general books had been published, so it was not until after the middle of the 15th century that medical works began to appear with somewhat increasing frequency. The first medical texts were Arabic in Latin translations: Albucasis' Treatise on Surgery was printed in 1471, followed by Avicenna's Canon in 1476. Rhazes monumental work, Liber Continens, was printed in 1486, and is today the largest incunabulum extant, weighing 22 pounds. A first printing of Galen's Ars Parva appeared about 1476, and a complete edition of Hippocrates in Latin, the Opera Omnia came from Rome in 1525.

The first of the great physicians to make his publishing debut in print was Andreas Vesalius. His Tabulae Sex, printed in Venice, led the new movement for illustrated medical texts. His masterpiece De Humani Corporis Fabrica was published in 1543, when he was only 29. The drawings were made by students of Titian.

A 17th century scientific publication that brought violent attacks upon it because of its revolutionary theory was William Harvey's Exercitatio Anatomica De Motu Cordis et Sanguinis in Animalibus. This work published by William Fitzer in 1628, remains as the guidepost to succeeding centuries of heart and blood research.

But let us bring the 5000 year story of great medical books up to date, to this new era of awesome technological advances which promise to change entirely the form in which publishing and reading have been pursued for several centuries.

The book as we have come to know it has not changed a great deal in the past 300 years; however, current events are shaking the publishing industry, and communication via electronic processes has liberated the printed word from the confinement of its paper format. The mesmerizing opalescence of words shining on the screen of CRT terminals is making slaves out of the present generation of readers.

The retrieval of actual book contents on the cathode screen is already possible. The full text version of numerous medical textbooks from Saunders, Churchill Livingstone, Lippincott, and other publishers, are available through the BRS/Colleague System, one of several bibliographic data bases in biomedical subjects available from Bibliographic Retrieval Services (BRS). Some of the titles included are: Gray's Anatomy, Current Therapy, Principles and Practice of Emergency Medicine, Birch's Emergencies in Medical Practice, and others, approximately 30 titles in all. The collection will not remain static, and BRS plans to review and update regularly this collection.

Full-text versions of several important journals will also be available. Some of the titles being loaded are: The New England Journal of Medicine, Lancet, The Annals of Internal Medicine, and the British Medical Association Journal. Already online are 18 of the 22 journals from the American Chemical Society, and Elsevier IRCS Medical Science journals is offering the full text of research articles from 32 biomedical and medical specialist publications. IRCS is the first data base to be transmitted to BRS via satellite from Europe, at the same time the print products are created. Search by keywords throughout the full text of published articles is possible, and these data bases can be easily accessed from libraries and individual terminals.

Even though it is believed that within the next 20 years a large portion of the scientific output will be transmitted electronically, it is impossible to envision a world without the beauty of books. I am sure that the feel and look of books matter to others as much as they do to me, and that is why I feel certain that the printed word and the electronic image can be guaranteed to become compatible bedfellows. Albeit the wondrous possibilities of the new medium have some evident advantages such as distribution over long distances, speed of retrieval, and compactness of storage among others, its performance can be hampered by certain circumstances. Unavailability due to computer down time (a recurring problem), limited number of hours i which the data bases are accessible, possible eye an body fatigue caused by VDT and extended sittin periods, and lastly, constraints due to the cost o technology itself pose definite problems towar widespread acceptance. On the other hand, the printe page neither blinks, nor malfunctions. Books are easil affordable, accessible, and their tactile identity offer warmth and intimacy while allowing the reader th option to sit or lie down at any place. Also, books ar objects of art and sentiment.

As this narrative comes to an end, I try to convinc myself that the world literary and scientific output is wel protected from the hazards of looting, pillage, and fire encoded and embedded in its electronic womb. Bu couldn't it be that it is more vulnerable than ever? Wha if someone pulls the wrong plug, or throws the wron switch? The results will not be as spectacular as thos caused by Nero, the Danes, Normans, or Moors, bu certainly just as tragic!

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Special Articles

Sending Children to College On Pre-Tax Dollars
Part II

Tricia N. Salerno

Part I appeared in the November 1983 issue of Arizona Medicine page 776.

The charitable remainder trust, unlike the gifts under UGMA and other trusts previously described, is an ttractive option to a parent whose assets consist largely of low basis, low income assets which have greatly appreciated in value. "Basis" is a tax term of art representing the axpayer's "cost" to obtain an asset. It generally takes into onsideration the amount paid for the asset, with certain upward adjustments for such expenses as improvements, and certain downward adjustments such as depreciation. There are, of course, many elements that go into this calculation to determine a taxpayer's "basis" in any given asset. Once a "basis" is established, a taxpayer's gain or loss on the disposition of that asset can be computed. If the parent sold these assets in order to obtain money to inance his child's education, he would have to pay an mmediate tax on the gain so that the proceeds available either for reinvestment in higher yield assets or to finance he education after the tax was paid would be greatly educed.

A "charitable remainder trust" is a device whereby property is put in trust for the benefit of a beneficiary either for the beneficiary's lifetime or for a term of years not exceeding twenty years. Thereafter, the "remainder" of he property must be distributed to a recognized charity. The tax benefits are substantial. If, instead of selling the assets himself, the parent transferred them to a "charitable emainder trust," he would obtain an immediate income ax charitable deduction in an amount equal to the fair market value of the remainder interest in the assets at the ime of their transfer to the trust. In addition, since the rust is a tax-exempt entity, the trust could sell the assets without recognizing any gain, and reinvest the proceeds in higher yield assets. These assets could then be used to inance the child's education.

Doctor Trust

A fourth type of tax-saving device is known as a "Doctor Trust." "Doctor Trust" is a name which has been given to a method of shifting income whereby a grantor transfers property used in his trade or business to a trust, and then eases it back. Because the donor is often a doctor, the erm "Doctor Trusts" was coined.

If the trust and lease agreement are properly drafted, the rust is taxed on the rental income received from the grantor/lessee at a low tax bracket, while the grantor/lessee takes a rental deduction at his higher tax bracket. The arrangement is especially beneficial where the property to be transferred into the trust is either nondepreciable or has already been fully depreciated since the grantor/lessee will receive a deduction for rent where he would otherwise be entitled to no deduction at all. The grantor/lessee therefore shelters more income from taxes, thereby having more available income from which to finance his child's education.

The trust involved in these transactions may be either an irrevocable trust with a *Crummey* power, or a short-term trust. If the trust is irrevocable, a transfer of unencumbered property to the trust is a gift for tax purposes measured by the fair market value of the property transferred. If the trust is a short-term trust, the amount of the gift for tax purposes is measured by the present value of the right to receive income from the property for the term of the trust.

The rent paid to the trust is generally taxed to the trust. The trust therefore receives any deductions such as depreciation, repairs, taxes, etc. A gift-leaseback may not achieve its desired result if the property transferred to the trust is encumbered at the time it is transferred and if the donor is personally liable on the obligation underlying the encumbrance, since payments on the obligation by the trust would constitute taxable income to the donor.

A major consideration in establishing a Doctor Trust is the deductibility of the rent payments by the donor. Rent paid by a taxpayer for use of property in his business is a deductible expense. When such rent is paid to a related party, such as a Doctor Trust, its deductibility depends on two considerations: 1) whether the transaction is a bona fide leaseback, and 2) the type of trust involved. In the case of irrevocable non-short-term trusts, grantors are generally allowed a deduction for rent paid as long as the transaction is bona fide and the rent is reasonable. However, if the court determined that the trust lacks a business purpose, the rent deduction will be disallowed.

Interest-Free Loans

The use of interest-free loans has become one of the most popular means of shifting income to lower bracket taxpayers. Generally, income from investment of interest-free loan proceeds will be taxed to the borrower. In order to be effective, the transaction must be a true loan, both in form and in substance. Taxpayers have attempted to use the interest free loan technique in "double loan" transactions whereby the lender loaned money interest-free to their children, and then borrowed it back at market interest rates. The Internal Revenue Service views such a transaction as a sham, merely entered into for the purpose of creating an interest deduction for the lender.

The Internal Revenue Service has contended for many years that when the interest-free loan is payable on demand, there is an annual gift to the borrower equal to the difference between the fair rate of interest on the loan and the interest actually paid. Case law, most importantly the case of *Crown v. Commissioner*, has, until recently, uniformly rejected the IRS's position on this point. The courts have concluded that at the time of the loan there is no taxable transfer because repayment of the loan can be demanded by the lender at any time. The taxpayer in *Crown* conceded that interest-free loans for a definite term might have a different result. In those cases, the amount of the gift can be valued by measuring the difference between the present value of the borrower's obligation to pay the principal amount at the end of the loan term and the amount of the loan. A recent Eleventh Circuit Case, *Dickman*, rejected the *Crown* analysis, holding that there clearly is an economic benefit to the borrower when a demand, interest-free loan is made. This economic benefit, given the broad reach of the Internal Revenue Code's gift

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tax provisions, is a gift for gift tax purposes. *Dickman* is on appeal before the United States Supreme Court, and hopefully the issue of gifts for gift tax purposes in interest-free loan transactions will be settled in the near future.

Even should the Supreme Court agree with the IRS's position in *Dickman*, the effect on many intra-family interest-free loans will not be significant. The amount of the purported gift will be determined each year based on the level of outstanding interest-free loans during that year. These transactions qualify as gifts of present interests, and therefore qualify for the gift tax annual exclusion. Therefore, any amount of interest up to $10,000 will not incur any gift tax ramifications.

There are, however, some other issues to consider when planning an interest-free loan transaction. First, the question arises to whom the loan can be made. A minor child is generally legally incapable of participating in a loan transaction. Under Arizona law, a loan may be made to a minor who has reached the age of sixteen if: 1) such loan is to be used for educational purposes and 2) prior to the making of the loan, an educational institution has certified in writing to the lender that the minor is enrolled, or has been accepted for enrollment, in the educational institution. A.R.S. §44-140.01.

If the child has not yet reached age sixteen, however, the statute mentioned above is of no help. Often parents will want to make loans to younger children so that the principal amount of the loan has time to earn enough interest to pay for the child's college education. Unless the loan is of a significant sum, the two-year (or less) hiatus between the child's sixteenth birthday and the date he begins college will not be long enough for sufficient income to be earned on the loan principal to help pay for the college education. In addition, the majority of sixteen-year-old students have not even begun to apply to colleges, much less been accepted for enrollment. This statute, therefore, is not as helpful as could be hoped.

Making an interest-free loan to a trust for the benefit of the child will also not work. If the trust, by its terms, is revocable, the income on the trust property will be taxed to the grantor-lender. Even if the trust is irrevocable by its terms, the ability of the donor to demand repayment of the loan at any time could be considered by the Internal Revenue Service a "reversionary interest" in the trust principal, thereby causing the income to be taxed to the grantor-lender.

Another possibility is to make the loan to a custodian under the Uniform Gifts to Minors Act. Although the statute does not specifically permit a custodian to borrow money in his capacity as a custodian, the loan should not be disregarded for income tax purposes. The income earned on the loan principal is not the result of the loan transaction itself, but rather of the investment of the loan proceeds. The custodian is clearly permitted to invest the loan proceeds for the benefit of the minor. Since the income is derived from an act which is clearly permitted by the custodian, the income should not be taxed to the lender.

Another concern in entering into an interest-free loan transaction is that the lender will allow the statute of limitations on collection of promissory notes to expire. In *Lang*, the court held that if an interest-free loan becomes unenforceable by reason of expiration of the statute of limitations, a gift of the principal of the loan occurs. The applicable statute of limitations in Arizona is six years. The lender should be sure to demand the principal of the loan at a date no later than six years after the date the loan is made. If, at that time, he so desires, he may remake the loan and start the statute of limitations running again.

There is an alternative to making a demand for repayment every six years. Arizona case law holds that a demand promissory note which, by its terms, clearly is not intended by the parties to be mature at the date of its inception but rather only after actual demand has been made does not mature until such demand is actually given. (*See Peterson v. Valley National Bank of Arizona*, 102 Arizona 434, 432 P.2d 446 1967). Thus, if the parties desire that the note be enforceable in Arizona at some time more than six years from its date, it should be clear on the face of the note that the note is not mature until such time as actual demand is given. This can be accomplished by requiring that written notice be given to the payee in order to effectuate the demand and giving the payee some reasonable period within which to pay after the written demand is given. Another evidence of the intent of the parties that the note not be deemed mature until actual demand is given could be evidenced by providing for some interest rate on the note if the note is not paid within the specified grace period after written demand is given.

Conclusion

The techniques described in this article have as their goal the taxation of income used for the benefit of persons with low income at such persons' lower tax bracket. These techniques do not require an initial outlay of huge amounts of cash or property in order to work. Taxpayers with children would be well-advised to consider techniques such as these to shelter income so that more funds are available for their children's educations.

Meeting the Challenge of Cost Containment:

Issues For The Specialist

Clyde W. Kurtz, M.D.

Clyde W. Kurtz, M.D., Phoenix, was one of seven guest speakers at the recent special issue conference sponsored by the Council of Medical Specialty Societies (CMSS) in Washington, D. C., October 3-4, 1983.

Nearly one hundred physician members and staff from the twenty-four CMSS societies met to hear presentations and share their thoughts and ideas on the immediate and long-term effects of DRGs and other cost containment strategies on the practice of medicine.

A written version of his speech follows.

I am honored, indeed, and very pleased to have been asked to participate in this Forum, "Meeting the Challenge of Cost Containment: Issues for the Specialist." (Not seeing any missing members from your group) I would have to say that this has just got to be about as exclusive a group as you can get—and being a member of two of the societies represented among those listed in the council, I feel I have vested interests in the product of these deliberations. Like most of you here, I have been involved in my local community with problems relating to the escalation of health care cost and, like you, have become almost overwhelmed with the intensity of pressure being placed upon the medical profession for change—often, I feel, without thoughtful reflection upon the question of change to what, and for what purpose, and to what end, and by what means. I will be quite frank with you that in speaking n the topic of capitation as a method of financial eimbursement for medical care, I am certain there are mong this group many more expert than I as to its echnical applications, for my practice habits and my ersonal beliefs are not of that persuasion. But, I will ssume, and hope correctly, that there is considerable nterest nationally as to what is happening with the Arizona Experiment."

Some assessment of the characteristics of capitation as the ode of delivery and financing is what I will be talking to ou about. For this is the mode chosen by the Arizona ealth Care Cost Containment System (AHCCCS—ronounced "ACCESS"). AHCCCS is primarily a joint state nd federal program for providing indigent care. It was gned into law November 18, 1981, with a start-up date of ctober 1982.

Prior to AHCCCS, Arizona was the only remaining state which the responsibility of care for the poor was left to e individual counties. Though the Arizona Legislature oted to participate in Medicaid, funds were never ppropriated. Thus, AHCCCS came about as a result of a esire of federal officials to find an alternative to Medicaid, hile at the same time, to initiate the broad concept of rice competition. For the state it meant federal relief for ounties suffering from the financial burden of indigent are compounded with the tax cap imposed by a citizens' x revolt. It was *not* initiated as a result of any major study howing inherent weakness in the county health system's pproach to health care. The enacted legislation, therefore, oes much further, in that it encourages expansion beyond e indigents to include state, county and private industry mployees and their families. In short, it is statewide, state-un programs of health care designed to replace the raditional fee-for-service health care delivery system with a ystem of competing prepaid capitated contractors. One as to believe that the desire to implement price ompetition via the infusion of multiple HMO plans into e existing delivery system was the major goal of the lanners, else it would have been cheaper to simply have unded the county program deficits where needed.

ignificance of AHCCCS

This legislation authorizes physician groups, hospitals, ounty health departments, insurance carriers and others to id for contracts to provide health care to persons etermined eligible. AHCCCS operates on a prepaid-apitation per person basis. With certain exclusions, uccessful bidders have the responsibility for meeting all e health care needs of their enrollees.

It is hoped that price competition and cost control will e achieved as a result of the competitive bidding because will be physicians and hospitals who are at risk to provide ll needed medical services in exchange for a fixed ayment in advance.

The importance of AHCCCS as an experiment lies rimarily in its demonstration that competitive pricing via e bidding will lower cost and still maintain access to uality of care. By controlling cost, AHCCCS expects to ttract the private sector, namely the employer group who, aced with increasing health cost in its benefit programs, ay see this as a viable alternative for its employees.

Other factors utilized by AHCCCS as mechanisms felt to estrain cost, though not unique to Arizona, are:

1. Use of primary care physicians acting as "gatekeepers" ho must approve all aspects of patient care, including pecialist referral, laboratory testing, and other services.
2. Cost sharing by patient, initially seen as useful, has een abandoned.
3. Limitation of freedom of choice.
4. Capitation of state by federal government.

I will spare you further birthing details: However, a few oints of reference may be important.

1. The freedom of choice for the poor in the major urban counties did not exist prior to AHCCCS, hence its continued exclusion in the new legislation was not a major obstacle, viewed politically, to the enactment of AHCCCS. Out in the rural areas, the doctor-patient relationship has always been predominate, irrespective of the patient's economic station. In most situations, this still exists because of the looseness of the networks providing care. That is to say, in the rural areas of Arizona, there are just so many "Docs" to give care to so many poor and the relationships and responsibilities don't change irrespective of the systems imposed.
2. Certain services covered by AHCCCS differ from the usual Medicaid provisions, namely the exclusion of long term care, home health care and family planning, primary alcohol and drug abuse and limitations placed on mental health.

With that as background for the Arizona program, I would have hoped to bring you objective data regarding the usual cost-management data as to utilization, etc. for comparative purposes to existing Medicaid programs elsewhere. More important to this group might be an objective look into quality assurance, which is the real nuts and bolts to making some judgments on the adequacy of provider organization structures, and processes, since most of these contracting plans were formed specifically to serve the AHCCCS population and have no track record as business enterprises. *Unfortunately, there is none*, which, by its absence, may give the skeptic observer cause for caution. The state's plan for quality assurance review is, thus far, nonoperational; objective data will, of course, be forthcoming, but likely not before the termination of the three-year experiment in 1985.

There are, however, some general reflections which can be made at this stage of the experiment and upon which you may draw your own conclusions. I want, for a few moments, to reflect on the HMO-type delivery system and its counterpart as exists thus far in AHCCCS. I would like to also look at the concept of price competition between prepaid groups and its conceptual counterpart in AHCCCS—for both these elements—The plan structure itself and the idea of competing plans is indeed the real thrust of AHCCCS—not indigent health care or its cost, per se. As I have said previously, the data analysis from the pre-AHCCCS county care had shown it to be cost effective, comparable in cost to the best of prepaid care of indigent groups elsewhere and less than their comparable Medicaid fee-for-service utilization, though I believe the latter has tightened up considerably in the past few years.

One can hardly get a better historical perspective of the origin of capitated health systems or medicine in general than 'Ala Paul Starr. However, my favorite remains the remarks of Robert M. Cunningham, Jr., in his tidy little volume, "The Healing Mission and the Business Ethic," where he says, "Everybody loves HMOs—except for two groups. The two groups are the doctors and patients. Doctors don't want to practice that way, and patients don't know what you're talking about." Nevertheless, the number is growing and the rate of growth is picking up with the introduction of individual practice associations. The IPA is a kind of back-door HMO that offers comprehensive services at fixed annual rates but allows its doctors to keep their private practice and pays them on a fee-for-service basis, thus diminishing resistance by doctors and improving accessibility for subscribers but *limiting the cost saving* that is seen as the principal advantage of the HMO. The traditional model HMO follows along the lines of a group model or staff model which differ primarily in the method of contractual arrangement of salary and in organizational incentives.

The HMO idea isn't really new at all. The basic element—physicians' acceptance of responsibility for care of a defined population usually at a fixed prepaid rate in advance—has been around in one form or another ever since the days of the sick club and friendly societies of Europe in the middle ages. In this country, George Washington and his fellow plantation owners paid physicians to take care of their slaves and much the same arrangement prevailed in my part of the country in the 19th and 20th centuries in company towns and railroad, mining and lumber industries, where corporations paid the doctors and often collected from the workers. The modern prototype HMO, the Kaiser Foundation Health Plan and Permanente Medical Group, began in 1983, and without exception, the commissions and committees that studied the subject lean heavily in their reports and recommendations on the experience of this group.

Although in the past there has been a belief that the existence of an HMO in a given market can lower health care costs, strong empirical evidence to support this view has been limited or mixed. With the increase in the number of operating HMOs that has occurred in recent years, however, there is a growing base of information lending support to the view that HMO presence in the market may help lower cost for both subscriber and nonsubscriber. The Twin City area of Minneapolis-St. Paul is considered the demonstration showcase where competition among plans serves to lower the escalation in cost of health care. Its market acceptance as a viable alternative to fee-for-service is evidenced in that community by the subscriber growth in the plans, which presently approaches more than thirty percent of the market. This is what we read and are told—but what I hear is different—what I hear is that not all is *peace* in Minneapolis-St. Paul—*chaos* is the descriptive term given to me by my colleagues which may be interpreted as disillusionment among all the participants save government and industry.

So, let's look then at these prototypes—the structure itself and the phenomenon of competing structures as they may be viewed or not viewed in AHCCCS.

AHCCCS authorizes physician groups, hospitals, county health departments, insurance carriers, and others to bid for contracts. The providers will participate within the system of prepayment capitated plans with full service plans being the dominant mode of operation. There are provisions for partial service contracts and, as a last resort, fee-for-service backup for certain high risk care. In general, the predominate mode will be "full service" when possible.

Prior to the enactment of AHCCCS only three or four HMO type plans were in operation in Arizona, all in the urban counties. The market penetration, however, approached ten percent. This year, twenty-three health care organizations submitted bids to care for an AHCCCS enrollment of 156,000. One hundred thousand of these are concentrated within the two urban counties. Of the twenty-three bidding contractors, only three or four represent the group HMO prototype or have any track record of management experience or past fiscal responsibility. The remainder of contracting groups represent basically an IPA form of delivery or consist of loosely joined consortiums of providers under some contract or subcontract arrangement with a management firm. In order to limit risk and attract bidders, AHCCCS plans for the state to reinsure catastrophic cost. At present, the state is *self-insuring* at a $20,000 level because of prohibitive premium cost on the private market.

The competitive aspect of the bid process in selecting providers is looked upon as one of the unique features of AHCCCS. It has also been the focus of recent litigation; whether it be competitive bidding or negotiated purchasing—the average monthly cost per AHCCCS member was $79 during the first year and $ 82 for his second contract year. For a family of four classified medically indigent or needy, the cost then is slightly over $360 per month.

These emerging groups are, for purposes of participation in AHCCCS, exempt from the regulatory control of the state insurance commission. With the exception of three smaller rural counties, there are at present two competing full-service providers within each county.

Regardless of plan type, all members must be under the case management of a primary physician as a gatekeeper. The elimination of self-referral to specialists and lower utilization of E.R. are touted to be cost-saving features but obviously open to further scrutiny.

The reimbursement, thus far, to both primary care physicians and specialists has been primarily on a fee-for-service basis, sometimes at a lowered rate, but often at U.C.R. status. Financial arrangements for hospitals are basically at 95% rate. Thus far, one can see few cost-risk incentives being applied, but procuring provider numbers may outweigh solvency at this point or the bid factors are at such level to allow the present looseness of organization management.

It will likely take at least eighteen months before the total cost factors will come home to roost. Significant fall-out among providers may occur when and if effective management comes into focus.

Now, as to price competition among participating plans—controlling cost in this fashion assumes that the plans will either directly control services or obtain them in a price sensitive market. The measurable effects of such competition in pricing depend on two major variables: market power and the uncertainty of risk. The scenario thusly is this—the greater number of patients and revenues involved, the more likely the contracting provider will be compelled to offer services at competitively lower prices. In this regard, the significant feature of AHCCCS is that it is not just a program for indigents. If a significant number of nonindigent employee groups find AHCCCS a viable option for their health care, then the stage will be set, forcing other systems to come forth to protect their market share. In Arizona, "mainstreaming" the indigents is being applied in reverse. And, indeed, if adequate numbers of nonindigent groups do not emerge, Arizona will simply have a prepaid capitated care program for indigents; and, in urban areas, in the meantime, we will have significantly adversely affected the county department delivery system—perhaps to an unretrievable status of prior excellence.

In this overwhelming concern for price consciousness, let us not, however, lose sight of the fact that there is no evidence that HMOs are providing the *same service* for less. The basket of services has a different mix from the fee-for-service care and only *certain patients* and *certain circumstances* will give *value preference* of price above freedom of choice.

The other factor to be considered in a contractor's "willingness" to bid is the *uncertainty of risk*, particularly in what is generally perceived to be a high risk population. Providers cannot assume that past utilization rates for persons under the county system will remain the same, nor to other state or national averages readily transfer. I'm not sure how you make the figures tumble right—maybe you need what we call in Arizona a "water witcher!" The first year experience with one reliable group, an HMO group model prototype, shows the in-hospital cost factors for the medically indigent and medically needy group to be four and one-half times any other enrollee group. Their bid for the second year's participation reflected these cost factors—and was rejected—I might add, to their considerable relief.

he "elasticity" of difference between their bid and the ccepted bid was not the usual 10% to 12% range—rather, it pproximated 30%—one can only conjecture as to the ltimate effect of such actions if indeed the care of the oor is being contracted for on a "loss leader" basis.

So, for the wrap-up—

The AHCCCS is one year old last Saturday. It's much too arly to render judgment as to its ultimate future. At resent, pronouncements remind one of the story of the hree blind men, each giving his description of an elephant, ne holding the tail, one a leg, etc.

A preliminary assessment of a statistically valid response f 1550 physicians taken by the Arizona Department of lealth Services and the Arizona Medical Association as late s July '83 adds but another facet to the commentary. Of his group only seven percent viewed the concept as good, 5% view it as a wrong approach, and the larger group take he ground of wait and see, hoping for better.

Though 28% view the "Gatekeeper" concept as positive respect to benefits of coordination and management, an qual number perceived it as either having split the edical community into rival groups or as being a eterrent to efficiency of delivery and quality of care. The pact of the gatekeeper aspect on utilization was viewed y 24% as being negligible with smaller percentages at ither extreme.

Administration of the program was given low scores by lmost all responding and the comments covered the amut from poor verification of enrollment and other formation to 42% who had either outstanding bills or had ot ever been paid. Incidentally, only 2.3% of those esponding report payment by capitation.

Given a set of circumstances in which to try an innovative rogram viewed for national application, one could hardly ave picked worse ground—Gentlemen—this is Goldwater ountry—hard rock country. This is the far west—The land f Monument Valley. The spaces are wide open, the people trong and independent—why, in Arizona it's still legal to arry side arms.

The demographic variables, both in population mix, easure and distribution, are just plain unwieldy.

A cursory look, however, reveals that none of the rincipal players at the onset of AHCCCS are still in their lots. Legislative chairs have changed—directors and dministrators and subadministrators and medical directors re all gone—new faces take their place. Hopefully, the tart-up horrors are behind but the *absence* of working uality assurance thus far leaves providers and enrollees like vulnerable.

County financial relief thus far seems as an illusion, with irst year cost increases exceeding seven to nine million in he two larger counties. Grumbling noises are heard from ll sides.

The hassles between departments of management have een notable and the subject of litigation. The bidding rocess, by many, is looked upon as simply negotiable urchasing. It is certainly not bidding in its normal meaning ut that's what you call it in a state where law does not ermit legitimate negotiated purchasing.

I think most would agree that a national model it is not! Not from the experiences of the past year and not likely hen more significant events surface.

I'm sure AHCCCS won't go away, but certainly a mid-ourse directional correction seems in order.

And, finally, there are many of us practicing physicians ho are not of the persuasion that the prepaid practice ode of delivery is the panacea government officials and conomists would have us believe. Indeed, in the rescription to slow the escalation of health costs, it is but ne small part. The incentives inherent to any system of delivery can be misused. In my view, price competition via prepaid delivery systems will be a poor substitute for professional self-regulation in the long term solution of cost control.

Prospective Payment System For Medicare Using DRGs

James S. Todd, M.D.

James S. Todd, M.D., a general surgeon from Ridgewood, New Jersey, discussed the Prospective Payment System for Medicare using DRGs as the basis for reimbursement at the recent organizational meeting of ArMA's new Hospital Medical Staff Section. In addition to membership on the American Medical Association Board of Trustees, Dr. Todd serves as Chairman of the Board of the New Jersey State Medical Underwriters, Inc. and is President of the Physicians Insurers Association of America. He has had considerable experience in evaluating the DRG System in New Jersey, the only state that has actually experienced DRGs to date.

To help Arizona physicians learn how the new system works, Arizona Medicine reprints highlights from Dr. Todd's presentation.

Whatever we think about DRGs, they may be the most important subject we'll talk about for some time. DRGs mean different things to different people. To some, they are decent, realistic and good. To others, they are despicable, ruthless and grasping. Probably the middle ground is correct . . . that DRGs are a dubious, risky gamble.

Before looking at the specifics of DRGs, we need to look at how we got where we are. To a large measure, we are the victims of our own success. By virtue of an unprecedented growth in science, technology, and patient care—abetted by subsidy and population shifts—we are now doing more things for more people. And they are the better for it.

There is virtually no limit to our ability to care for the sick. This has resulted in many unanticipated problems, the most acute of which is the realization that our resources are limited. Very rapidly, cost has become the number one problem. This increase in cost really shouldn't surprise anyone, for if the composition and age of the population is changing, and if we are doing more things to more people, and if the life span and its infirmities are increasing, then health care is going to cost more.

Suddenly, however, those who have promised so much—government, industry, and insurance companies, find that they can no longer comfortably bear the cost of fulfilling their promises. And, in a shaky economy such as we are experiencing, they really need to do something about it. And, make no mistake, they *will* do something. What we need to fear most is a resultant bottom line mentality that ignores quality and access for the sake of cost.

To some degree, we in the medical profession have contributed to this problem and, therefore, surely must participate in its solution. While we must stand fast on issues of quality and access, we must also get our own house in order costwise. I submit that this is not the case at this moment. The medical profession is not Simon-pure in terms of its use of resources in containing costs. There is fat in the system and we need to deal with that.

Furthermore, I think we need to realize that we cannot, and probably should not, do everything scientifically possible for everybody, everywhere, all the time. Rather, our responsibility is to develop a cautious and thoughtful attitude toward the use of resources. Our responsibility is clear because 70% of health care costs are generated by the decisions we make about the care we give our patients. A large percentage of these costs is initiated by what we do in hospitals. If HMOs have proven nothing else, it is that they reduce health care costs primarily by reducing hospitalization.

Inescapable, then, is the realization that if we are to avoid a collision of economic interests, hospitals and physicians can no longer go their separate ways. Hospitals need physicians. Physicians need hospitals. And patients need us both.

In going our separate ways, hospitals and physicians have sometimes done terrible things to each other, competing in many unfair ways, appearing to have different goals when, in reality, our objectives should be the same—effective, efficient, economical patient care.

Now, for the first time, the economic security of our profession, and the quality of care we provide, depends on this cooperation. Here is what three people deeply involved in health care say:

David Kinzer, the president of the Massachusetts Hospital Association, recently wrote, "The changes wrought in hospitals' incentives will certainly create new problems in hospital-medical staff relations. Now, the incentives in our fee for service medical payment system that reward physicians for doing more are clearly in conflict with those of the hospital. The need for physician understanding, cooperation, and support is critical if the hospital is to survive."

The Chairman of the Board of the American Medical Association said, "As the hospital continues to evolve as a significant provider of health care services, the degree of physician involvement will continue to increase as well. Physicians can no longer be concerned solely with issues that affect their individual practices, but must involve themselves with the collective concerns of the hospital medical staff, and must seek out the most effective channels to deal with these concerns."

And, from John Iglehart, a respected journalist and observer of the scene, "Tensions have always existed between hospitals and their attending physicians, and they probably always will, given the reality that their interests are not the same. As the medical care system moves to implement a system of prospective reimbursement, the need for a closer relationship between hospitals and doctors will be even more critical as they strive to achieve the appropriate balance between the delivery of high quality care and the judicious use of society's limited resources."

Enter Prospective Pricing, according to the DRG concept.

In 1970, a group of researchers at Yale University attempted to segregate patients into groups that would have equal lengths of stay and equal consumption of resources to see if they could find groups of patients that lay outside these norms and, therefore, were getting either too much or too little care.

This was done initially purely for quality management, but there were those who thought it would be possible to use the system as a reimbursement mechanism. Thus, DRG was converted to a prospectively determined reimbursement system which uses hospital case mix in an effort to establish a stronger link between the resources a hospital consumes and the actual medical needs of the patient. Theoretically, patients in each category are, on an average, medically similar in terms of resource consumption.

Briefly, under the DRG system, each hospital patient is assigned to one of the 467 DRGs based on principal and secondary diagnoses, principal and secondary procedures, and, in some cases, age. The hospital is then reimbursed a prospectively determined rate for all patients in the group regardless of the length of stay and amount of services provided.

For example, "X" number of dollars for an appendectomy, "Y" dollars for a tonsillectomy, and "Z" dollars for myocardial infarction. Reimbursement becomes a single payment for the DRG regardless of the variation in actual services provided. Presumably, this rate reflects the average actual cost.

Thus, if the hospital provides the care more cheaply, it makes a profit. But, if, on the other hand, the hospital spends more in resources than the DRG allowance, then it must bear the loss. Clearly, a rather strong change in incentives and a broadening of interest in what and how much goes on in the hospital.

DRGs were implemented in New Jersey nearly three and one-half years ago. They serve as a model, of sorts, for the federal program although the New Jersey program differs from the federal in that in New Jersey, all payors (Medicare Medicaid, private pay, Prudential, and the Blues) all pay the same rate.

A recent survey of hospital administrators in New Jersey disclosed the following points of agreement:

- that the method of allocating costs was reasonable in New Jersey and also as the feds were planning to implement it.
- that there was uncertainty as to the system's ability to control costs.
- that DRG absolutely requires that all hospitals have automated data processing systems.
- that 80% of hospitals promptly involved their medical staffs
- that administrators are confident that DRG management reports will improve control over hospital operation.

Since New Jersey received a waiver from HCFA to include Medicare/Medicaid and since the federal goverment was vitally interested in being supportive of the pilot project, they took an interest in the program and, indeed, helped to finance its implementation.

But, faced with ever more difficult economics of health care, Congress could not wait for the outcome in New Jersey, and, so, in April of 1983 President Reagan signed Social Security amendments mandating prospective reimbursement according to DRGs for Medicare patients to be effective October 1, 1983.

Basically, the federal program will do what the New Jersey program does: 1) It will involve a payment of a fixed amount per discharge based on the diagnosis. 2) All hospitals will be covered except children's, psychiatric, rehabilitation and long-term hospitals. General hospitals having one of these departments may request to have that department excluded from the DRG reimbursement. 3) There will be a three year phase-in in the determination of rates; the fourth year, payments will be based on the urban or rural national average price for each DRG, adjusted for differences in area wages.

There will be an eight step process for the determination of rates in nine regions, each one divided into urban and rural groups.

There will be some exclusions initially. Educational programs will continue to pass through expenses. Equity is going to be reduced for investor owned hospitals in an attempt to reduce their profits. Capital expenses will not be ncluded for at least the first three years.

Interestingly, there is no DRG appeal once it has been established for your hospital. If you believe that the calculations are incorrect and that they used the wrong igures, you can appeal. But, once you agree that the igures are correct, you are stuck with the DRG rate. There will be waivers for those states that already have similar programs in place. To date, those states are Massachusetts, New York, New Jersey, and Maryland.

A real sleeper in the DRG legislation, and one that is not commonly remembered, is that the Office of Management and Budget has been told by Congress that they must ubmit a report to the Congress in 1985 as to the effectiveness and accomplishments of the DRG program. Hidden in that requirement is a statement that says they hall also report on the feasibility of including physicians' payments under the DRG mechanism. Sounds pretty good. Surgeons have lived under DRGs essentially for surgical cases for years. The kicker is that as OMB looks at the program, their proposal would be that all of the money hould go to the hospital and the hospital would then pay he physician the DRG rate. If you don't believe it is mportant to work with hospitals, just remember this one.

It has been said that nothing in this world is useless. If nothing else, an experience can be used as a bad example. After almost three years experience in New Jersey with DRGs, I cannot tell you whether it is a good program or a bad one . . . whether it saves money or not . . . whether it has had any effect on quality. The answers are just not yet available. And this is why the AMA, in its testimony before Congress, urged a go-slow approach, testing the concept irst in pilot programs which will tell if the system is really going to work.

Unfortunately, that was not to be, and we are today faced with DRGs.

Although I cannot give you the bottom line in New ersey, I can tell you three things that are eminently clear bearing in mind that New Jersey is an all-pay state with no opportunity for cost shifting):

- At the end of three and one-half years, more hospitals re in the black than ever before.
- DRGs have a profound effect on the way hospitals do business.
- The relationship between the medical staff and the hospital administration has changed considerably. The whole success of the DRG system in hospitals depends upon cooperation and understanding between hospitals nd their medical staffs.

Probably no system is either all good or bad. If nothing else, prospective reimbursement is going to force hospitals nd physicians to look at what they are doing, how much hey are doing, and how much it costs. For the first time, hospitals are going to be forced to look at their true cost centers and bring them into line. There will be no more obbing Peter to pay Paul, and cost accountability for the hospital or the physician is not all bad.

Also, for the first time under this system, data is available o show physicians how they individually contribute to a hospital's cost and efficiency on a per case basis. If a doctor admits a patient with cholecystitis to the hospital, the hospital will be able to determine how much that case costs hem. It can compare its cost with the DRG rate to determine whether that physician is costing the hospital money or whether he is making money for the hospital. Basically, then, this all becomes a measure of resource consumption and affords comparisons between individual physicians and also between hospitals.

Viewed in this fashion, the system really can tell us what we are doing, how much we are doing, and how much it costs individually and collectively.

It would be difficult to argue with the value of this information, but . . . when applied as a reimbursement mechanism, there is the opportunity to adversely manipulate the system resulting in unconscionable cuts in payments, in undue and potentially damaging influence on physician practice and reputation, to say nothing of depriving patients of needed care by reducing payments to a level where a hospital may not be able to continue a needed service.

In New Jersey under the current system, the hospital is in competition with itself. If it lives within the DRG allowances this year, then next year the regulators are going to turn the ratchet just a little bit more forcing the hospital to do even better. In reality, this ratcheting process can literally drive a hospital out of business.

From a very practical point of view, the system requires much from both hospitals and physicians. The hospital will need an automated data processing system and there will have to be extensive additions to the record room staff. The record room now becomes, from the hospital administrator's point of view, the most important department in the hospital because there will be no payments until the charts are completed and the bills sent.

For the individual physician, it means increased scrutiny in relation to cost as well as quality. If the physician provides excellent quality care but it still costs twice as much as somebody else producing the same quality, then it will be reviewed. You will also have a review of departmental activities within a hospital, comparing them with other hospitals, to see how well each is doing.

I am convinced that physicians, if shown data, will, indeed change their behavior without any sort of coercion. It has happened in New Jersey. There is no doubt that physicians will be under increasing pressure from administrators to keep within the DRG allowances. If the physician stays within the tolerance of his own hospital, there will be no problem. But if one or two physicians are out of step, you can be assured that they will have problems.

The system also means that there will be increased pressure from the administration to keep the occupancy up. You will be pushed to increase the number of patients you admit to the hospital but also pressured to get them out sooner. There will be tight capital budgets, elimination of marginal services, and regionalization as hospitals begin to discover that certain of their services are too expensive to continue.

There is great potential for abuse, particularly by providers. Or perhaps we should say circumnavigation since that is really how we survive regulation. Areas of concern include:

- DRG creep—if you have three diagnoses on the chart, and you can manipulate those diagnoses to get the one with the higher reimbursement first, then the hospital will make more money.
- Skimming the good cases and refusing others—hospitals will try not to admit those patients with unprofitable DRGs.
- Neglect of the physical plant and equipment because the money to keep it up will not be available.
- Cost shifting to other payors.
- Neglect or elimination of education and/or research because it is very expensive and there is little return.
- Manipulating cases for early discharge.
- Lack of hospital beds for patients of those physicians who consistently exceed the DRG allowances and perhaps even ostracism of physicians based on their cost to the hospital.

But probably the thing to be feared most is merchandising of health for purely economic reasons. As the length of stay shortens and the cost per case declines, any increase in the number of cases treated will increase health care costs in the aggregate.

The new health commissioner of New Jersey said soon after his appointment, "If DRGs fail, the only thing left is socialized medicine." And he may be right. If we do not find a way to control costs, we may end up bankrupting the health care system, leaving the federal government no choice other than nationalization.

While prospective pricing has some ominous overtones, at the same time it does have the potential to increase quality accountability as well as cost accountability. It is our responsibility to be sure that it is not used as a tool to strangle our ability to care for patients, all for the sake of economy.

The premium now is on cooperation at all levels. Hospitals and physicians must work together to capitalize on the strength each has. If they can do so—in a time that seems to push them toward conflict—a better health care system should result.

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Sidney C. Werner, M.D.

_egislation

These are the times that all of us hould pitch in and approach all the orthcoming changes on the horizon ffecting our health care delivery ystem in our state and this country of urs, with understanding and in the pirit of reconciliation rather than onfrontation. It is with these concerns overing over our heads, that we hould be supportive of the purposes nd activities of organized medicine at he county, state, and national levels.

During the next few remaining onths, I will try to share with all of ou some of the important functions of he Arizona Medical Association for its onstituency. The most important ctivity of ArMA is in the legislative ield. No other medical organization in his state tries to monitor the legislative ctivities affecting health care better han ArMA.

Through our legislative committee, ur lobbyist, Allan Stanton (who is onsidered one of the best, if not the est) and Kevin Walker, our ever illing staff, spend long hours and umerous conferences understanding he different bills introduced and ebated by the various committees of oth houses of our state Legislature. The number of bills relating to health care is escalating exponentially. In 1982, we monitored 45 bills; in 1983, 87 bills were introduced in the Legislature; and in 1984, it is estimated that over 100 bills will come before both houses of the Legislature. We physicians should be more active in the legislative field starting with our individual district legislators. Try to know them and start a dialogue with each of your state representatives and your senator. Have your wife know the legislator's wife because together you all can be a very influential voice in the deliberation of important bills affecting the health care delivery system in our state.

There is a universal concern by everybody about the escalating cost of health care. There will be numerous attempts, through legislative action, to change the current methods of health care delivery and the reimbursement mechanisms to the people of Arizona. We at ArMA will try to protect our interest and preserve the quality of health care through our dialogues with different legislators and keep our good rapport with the Governor of the state! Our able lobbyist will no doubt help us but we need all your help, guidance, and above all your continued support for organized medicine at all levels (county, state, and national—AMA) by paying your dues and influencing your colleagues who are not presently members to join us. Your dues may be the best investment you can make in maintaining the best health care in the world and maintaining our current freedom.

Have a nice day.

Neopito L. Robles, M.D.
President,
Arizona Medical Association

Can Cost Efficient Health Care be Taught?

It is no longer a question of whether cost efficient medicine should be taught. Education is now imperative. All segments of society agree that costs attributable to health care are high. Debates continue concerning the contributing factors, but the data remains unchallenged. Between ten and eleven percent of the U. S. gross national product goes to health care. Philosophically, the amount of money justified for health spending may be argued but there is strong evidence that many segments of the expenditure can be changed and reduced. Shortened lengths of hospital stay, less diagnostic testing, use of lower priced drugs, and ambulatory care rather than inpatient treatment all lower costs.

In 1977 the National Commission on the Cost of Medical Care recommended that medical, dental and osteopathic schools develop curricula to expose students to medical economics.[1] In the same year, the American Medical School deans declared that medical institutions have an obligation to teach cost containment.[2] By 1978 some thirty-four percent of the medical schools had programs underway or in the planning stages for teaching health care cost containment to undergraduate and housestaff graduate medical learners.[3] In 1982 the Government Accounting Office (GAO) found seventy-seven percent of ninety medical schools responding to a questionnaire were providing programs so that sixty-eight percent of the graduates had received some educational exposure to the problem.[4] The GAO further estimated for 1981 that 2,154 of 4600 residency programs included cost containment teaching and some 2,195 continuing medical education offerings had exposed 90,600 practicing physicians to cost containing information between September 1979 and 1980.

What must be done to accomplish this form of education is well described.[5] The curriculum should be a continuum. Changes in behavior must be reinforced to be effective and should be taught at the learner's level. The teaching should begin early. Certainly for medical students this means the preclinical years or before, with special emphasis on nonclinical economic forces. The clinical curriculum should be administered where possible in a cost conscious, efficient practice setting. As with all education, there should be periodic evaluation, especially to assure adequate quality of care is practiced in the cost containing environments. Finally, careful selection of faculty should assure a commitment and vigor toward the cost conscious objective.

The behavior of physicians does change when these educational principles are applied. Patterns of ordering tests and procedures, drug prescribing patterns and hospital utilization do change and expenditures do decline. Like new patterns of behavior, they do not remain, however, unless continually reinforced.

Some authors have recognized that education alone is not enough to influence cost adequately. This is partly because not all institutions will voluntarily participate. But, more importantly, it is difficult to maintain the established behavior patterns against other forces to spend without substantial reinforcement. Such reinforcement has a substantial cost, however.

Eisenberg and Williams[6] have argued through a literature review that a totally effective program to reduce costs must depend upon some combination of six approaches. Their analysis suggests that neither education, peer review and feedback, administrative hospital policy changes, planning participation by providers, financial rewards, nor penalties alone will significantly reduce costs. When education is combined with administrative changes such as policies eliminating required routine chest radiographs, sustained hospital cost reduction does occur. Peer review and feedback combined with education has reduced the number of surgical procedures, decreases in physicians' use of diagnostic procedures and small decreases in length of hospital stay. Financial penalties combined with education and peer review and feedback decreased physician office injections. Without an educational component, some decreases in cost can be effected by other approaches such as financial rewards with administrative changes or administrative changes combined with provider participation, financial penalties and rewards.

There is concern that cost efficient education might alter the state of the nation's health. This can be monitored. Using the standards known to all, Blendon and Rogers[7] believe the yardsticks are adequate and available. These include monitoring sites where people receive care, the frequency of provider contact, trends in mortality and the adequacy and timeliness of care will assure that the goals of cost efficient care are kept in perspective without change in quality.

At the University of Arizona, costs of health care are emphasized. Prices are posted in some clinics, price manuals for laboratory tests and drugs are available to learners, patient records receive periodic printouts of tabulated costs, major teaching conferences raise issues of expense, drug formularies emphasize cost effective therapeutics, the role of prevention is included in curricula and various seminars on the issues are in place.

Cost efficient health care can be taught. It is the responsibility of educators and all those whose behavior will be emulated by learners, indeed, it is our obligation to assure that no other form of health care is our standard.

Louis J. Kettel, M.D.
Dean
University of Arizona
College of Medicine

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Arizona Medicine

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Briefly Noted

Dr. and Mrs. Suresh Anand, Phoenix, ecently visited the Peoples' Republic f China. During their two week stay, ney visited hospitals for traditional and Vestern medicine in Shanghai, Wuxi, lanking, and Peking. While in Xian, Dr. Anand presented his paper, "Comparision of Cloprednol and rednisone in the Treatment of Asthma."

Earl J. Baker, M.D., Phoenix, ArMA's president-elect, gave the welcoming peech at the Buckle Up Every Time Awards presentation held at the ArMA Building in Phoenix on November 30. he program recognized the winners in ne recent Buckle Up Every Time notivational contest cosponsored by ArMA and the ArMA Auxiliary along vith 20 other community organizations.

James J. Berens, M.D., Phoenix, liscussed "Breast Cancer" at the November Health Talk forum osponsored by ArMA and Blue Cross/Blue Shield of Arizona.

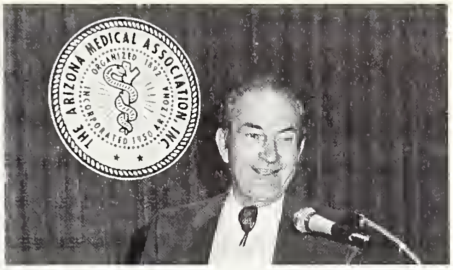
Donald C. Boatwright, M.D., cottsdale, has been elected president f the Scottsdale Memorial Hospital-North medical staff. Other officers are **Gerald D. Wolfley, M.D.**, president-elect and **Edward R. Katz, M.D.**, ecretary-treasurer.

George F. Brown, M.D., Glendale, **ohn D. Blocher, M.D.**, Phoenix, and **Robert C. Shapiro, M.D.**, Scottsdale, discussed **Holiday Ups and Downs** on he December **Health Highlights** cable elevision program cosponsored by ArMA and **Samcor's Video Services**.

Martin G. Fronske, M.D., Tempe, elebrated his 100th birthday in December at a party at Friendship Village, Tempe. Dr. Fronske, a Flagstaff physician for more than fifty years, says hat although he cared for hundreds and hundreds of people, he never took any extraordinary measures to care for his own health. "My life has been very happy—I wouldn't have changed anything about it," he said.

Mahnaz G. Kassai, M.D., Gilbert, has successfully completed the American Board of Family Practice Certifying Examination and is certified as a Diplomate of the American Board of Family Practice for the period of 1983-1990.

Drs. Neal A. Klein and **Martin E. Kraus**, Phoenix, have been named medical directors of the recently inaugurated Phase II Cardiac Rehabilitation program at St. Joseph's Hospital and Medical Center.


James J. Berens, M.D.

Paul W. Kliewer, M.D., Wickenburg, attended the Annual Scientific Assembly of the American Academy of Family Practice in October. Dr. Kliewer is president of the Arizona chapter and an alternate delegate to the Congress representing Arizona.

Ravi Koopot, M.D., Phoenix, was a guest speaker at the American Academy of Chest Physicians 49th Annual Scientific Assembly in Chicago recently. Dr. Koopot spoke on the subject, "Extended Prosthetic Patch Aortoplasty as a Primary Treatment for Coarctation of the Aorta."

Robert A. Price, M.D., Phoenix, director of the Family Practice Center at Good Samaritan Medical Center, was one of 24 family-practice educators from the United States invited to spend three weeks in China on a technical exchange program. The group made ward rounds, attended seminars, and met with hospital staffs in six Chinese cities.

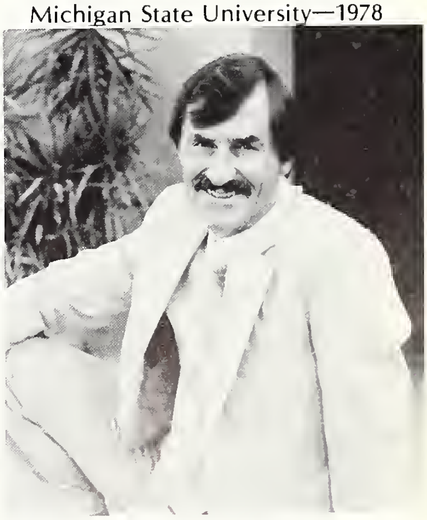
Robert F. Spetzler, M.D., Phoenix, has been named chairman of the division of neurological surgery and director of the neurosurgery residency program at the Barrow Neurological Institute of St. Joseph's Hospital and Medical Center. Dr. Spetzler is a former associate professor of neurosurgery at Case Western Reserve University School of Medicine, Cleveland.

Herbert L. Winograd, M.D., Phoenix has been appointed the first chief of staff of Phoenix Children's Hospital. Other officers include **Drs. Richard H. Reznick**, **Jesse D.Cohen**, **Paul S. Bergeson**, **David S. Trump** and **Marshall D. Lustgarten**.

The Arizona Medical Association welcomes the following new members:

Maricopa

Gary Adler, M.D.
Orthopedic Surgery
330 North 75th Street, Scottsdale
Chicago Medical School—1976
Eduardo E. Anguizola, M.D.
Anesthesiology
2420 South Emerson Circle, Mesa
Autonomous University of Guadalajara—1976
Paul G. Bauer, M.D.
General Practice
3201 West Peoria, Phoenix
University of Minnesota—1951
Ralph E. Bennett, M.D.
Rheumatology
525 North 18th Street, Phoenix
Mt. Sinai School of Medicine, New York—1978
George R. Best, M.D.
Anesthesiology
7008 East Osborn, Scottsdale
University of Michigan—1961
Paul A. Blake, M.D.
Physical Medicine and Rehabilitation
7351 East Osborn Road, No. 106, Scottsdale
Medical University of South Carolina—1979
Philip A. Bond, M.D.
Pediatrics
6707 North 19th Avenue, Phoenix
University of Wisconsin—1959
Ronald E. Borg, M.D.
Family Practice
4950 East Elliott Road, Phoenix
University of Nebraska—1979
Charles R. Breed, M.D.
Cardiology
2501 East Southern, No. 1, Tempe
Georgetown University—1976
Ronald J. Castro, M.D.
Obstetrics and Gynecology
5422 West Thunderbird Boulevard
Glendale
University of Arizona—1974
Melvyn Chase, M.D.
Dermatology
2525 West Greenway Road, Phoenix
Wayne State University—1968
Culley K. Christensen, M.D.
Orthopedic Surgery
7473 East Osborn Road, Scottsdale
University of Utah—1973
Robert A. Comp, M.D.
Pulmonary Medicine
1130 East McDowell Road, Phoenix
Michigan State University—1978


Marvin Schneider, M.D. Speaker at ArMA seminar on Prospective Payment—The Impact on Medicine & Medical Education in Tucson

Glenn Cook, M.D.
Diagnostic Radiology
3604 Wells Fargo, Scottsdale
University of Utah—1976
Charles M. Creasman, M.D.
Orthopedic Surgery
2610 North Third Street, No. B, Phoenix
Tulane University—1976
David L. Elliott, M.D.
Internal Medicine
9211 North Second Street, Phoenix
Indiana University School
of Medicine—1975
Nathaniel A. Fastenberg, M.D.
Internal Medicine
334 West Tenth Place, Mesa
Rush Medical College—1978
Howard Frank, M.D.
Anesthesiology
2443 South El Dorado, Mesa
Hahnemann Medical College—1971
Perla I. Gabuya, M.D.
Psychiatry
2500 East Van Buren, Phoenix
Santo Tomas University—1956
Richard Galloway, M.D.
Psychiatry
5040 North 15th Avenue, No. 305, Phoenix
University of Texas—1979
Marvin L. Gibbs, M.D.
Obstetrics and Gynecology
1050 East Southern Avenue, Phoenix
University of Pittsburgh—1976
Edgar H. Hernandez, M.D.
General Surgery
1402 South Mill Avenue, No. 3A, Tempe
University of Utah—1978
Merlin H. Johnson, M.D.
Ophthalmology
13460 North 94th Drive, Peoria
Loyola University—1941
Paula M. Joubert-Greene, M.D.
Family Practice
325 East Baseline Road, Phoenix
Howard University—1980
Herbert R. Kahn, M.D.
Internal Medicine/Cardiology
4550 North 51st Avenue, No. 61, Phoenix
Ohio State University—1971

Current Perspectives in Allergy—The Faculty. Dr. Wilber Voss, program chairman with Drs. James Dover and David Hardy.

Mark Kishel, M.D.
Family Practice/Pediatrics
2601 East Roosevelt, Phoenix
S.U.N.Y. at Buffalo—1972

Thomas E. McCall, M.D.
Radiology
450 West Fifth Place, Mesa
Tulane University—1978

Leigh C. McGill, M.D.
Pediatric Surgery
1010 East McDowell Road, Phoenix
University of Colorado—1975

John E. McIntosh, M.D.
Psychiatry
525 North 18th Street, No. 401, Phoenix
University of Tennessee—1961

Joel B. Metelits, M.D.
Internal Medicine
4212 North 16th Street, Phoenix
George Washington University—1977

Craig R. Metzger, M.D.
Orthopedic Surgery
755 East McDowell Road, Phoenix
University of Alabama—1976

Rory N. Minck, M.D.
Obstetrics and Gynecology
1402 South Mill Avenue, No. 5A, Tempe
Chicago Medical School—1976

Drs. John Galgiani, Wilber Voss, and Lawrence Friedman

Richard P. Mueller, M.D.
Internal Medicine
10217 Palmer Drive, Sun City
University of Michigan—1945
Robert V. Newman, M.D.
Obstetrics and Gynecology
4614 East Shea Boulevard,
No. D-250, Phoenix
University of Utah—1979
Scott R. Partridge, M.D.
Obstetrics and Gynecology
312 North Alma School Road
No. 15, Chandler
University of Colorado—1979
Krishna M. Pinnamaneni, M.D.
Endocrinology
2501 East Southern Avenue,
No. 14, Tempe
Guntur Medical College,
Andhra University—1972
Kamala Premkumar, M.D.
Anesthesiology
10423 North 22nd Way, Phoenix
Bangalore Medical College, India—1972
Allan H. Pribble, M.D.
Cardiology
2601 East Roosevelt Street, Phoenix
Washington University—1965
John H. Raife, M.D.
Emergency Medicine
4102 North 52nd Street, Phoenix
University of Iowa—1975
Karen T. Robertson, M.D.
Pediatrics/Ophthalmology
222 West Thomas Road, No. 315, Phoenix
Cornell University—1975
Jon Rudnick, M.D.
Occupational Medicine
P. O. Box 1980, Phoenix
University of New Mexico—1975
Calvin A. Schuler, M.D.
Family Practice
7743 North 47th Drive, Glendale
University of Nebraska—1976
Frederick S. Simonie, M.D.
Cardiology
7514 East Monterey Way, No. 4, Scottsdale
Wayne State University—1976
William E. Smith, M.D.
Internal Medicine/Nephrology
909 East Brill, No. 108, Phoenix
University of Kansas—1974

(L to R) Dr. William Mangold, chairman of PCMS Legislative Committee; Rep. William English (R-Dist. 9); Dr. Loren F. Taylor at informal meeting with Pima County legislators.

Paul E. Stander, M.D.
Internal Medicine
15808 North 52nd Place, Scottsdale
Jefferson Medical College—1980
Gregory Stevens, M.D.
Internal Medicine
2501 East Southern Avenue, Tempe
University of Utah—1980
Joseph L. Sun, M.D.
Family Practice
3008 North Third Street, Phoenix
Manila Central University—1965
Thomas J. Taylor, M.D.
Radiology/Oncology
1400 South Dobson Road, Mesa
University of Oregon—1968
Roger Thompson, M.D.
General Practice
1901 East Thomas Road, Phoenix
University of Buffalo—1959
Nicholas A. Toronto, M.D.
Family Practice
59 East Hibbert, Mesa
University of Pittsburgh—1960
Linda Turner, M.D.
Obstetrics and Gynecology
755 East McDowell Road, Phoenix
University of Arizona—1978
Quirino Valeros, M.D.
General Surgery
2104 East Enid, Mesa
University of the East,
Philippines—1961
Reynaldo L. Vito, M.D.
Family Practice
238 North 113th Avenue, Youngtown
University of Santo Tomas,
Manila, Philippines—1960
Mark B. Z. Wall, M.D.
Gynecology
16 North 51st Avenue, No. 107, Phoenix
University of Manitoba,
Canada—1944

John Wells, M.D.
Gastroenterology
3411 North Fifth Avenue, Phoenix
George Washington University—1978
Robert O. Wilson, M.D.
Orthopedic Surgery
12238 North 113th Avenue, Youngtown
University of Utah—1969

Service Members

Maricopa County
Uel D. Crosby, M.D.
Obstetrics and Gynecology
140 East La Mar, Phoenix
Southwestern Medical School—1962

Leonard J. Kirschner, M.D.
Aerospace Medicine
U.S.A.F. Hospital Luke/SG,
Luke Air Force Base
Albany Medical College—1961

Associate Members

Maricopa County
Ralph F. Pike, M.D.
Orthopedic Surgery
10622 Mimosa Drive, Sun City
New York Medical College—1949

Pima County
Avrom M. Greenberg, M.D.
Internal Medicine
3016 Placita Fuente, Tucson
University of Buffalo—1936

Resident Members

Maricopa County
Edward J. Bombach, M.D.
General Surgery
Maricopa Medical Center
Southwestern Medical School—1981
Jeffrey J. Buyse, M.D.
Obstetrics and Gynecology
Good Samaritan Medical Center
Boston University—1979
Alan G. Golston, M.D.
Internal Medicine
Maricopa Medical Center
Louisiana State University,
New Orleans—1982
H. Susan Kower, M.D.
Psychiatry
Maricopa Medical Center
University of Arizona—1982

Drs. Wayne Wood, John T. Clymer, Ron Spark, Paul Dempsey and J. H. Hutchinson.

Michael J. Lucas, M.D.
Obstetrics and Gynecology
Maricopa Medical Center
University of California,
Los Angeles—1981
Brent S. Maughan, M.D.
Obstetrics and Gynecology
St. Joseph's Hospital
University of Oregon—1980

New Student Members
University of Arizona

Ansermo L. Arthur
Ann Bullington
Vincent A. Marino
Peggy Spencer

Affiliate Member

Pima County

Donna Levinson, PA-C
Certified Physician's Assistant
3061 East Weymouth Street, Tucson
Bowman Gray School of Medicine
Wake Forest University
Certified in 1979

The Medical Society of the United States and Mexico—1983

The Medical Society of the United States and Mexico has just completed its annual meeting in Morelia, Michoacan, Mexico. This Society was founded in 1957 by interested Mexican and United States physicians to encourage scientific interchange and friendship and to aid in the understanding and resolution of mutual medical problems in our countries. Two of these original founders, Dr. Harry Thompson of Tucson and Dr. Hector Gonzales Guevara of Mazatlan, were present in Morelia. Their vision embraced an organization which would be different from other medical societies in that the morning scientific program should be a pot pourri of scientific excellence which would serve to intrigue and enlighten our membership. American presentations have commonly been on timely new approaches to diagnosis and treatment of disease and are most deeply appreciated south of the border. Mexican presentations have been similar in nature and commonly involve areas such as in-depth studies of amebiasis or a unique non-gringo way of looking at common social-medical problems such as teenage drug abuse.

The scientific presentations have always been balanced by a truly superb social program. For example, in Morelia the meeting opened with a formal inauguration at which Governor Cardenas of the State of Michoacan, presided and at which varied presentations, including one in flawless broken Spanish by myself, were delivered. A round of cocktails and dinner then followed. On Thursday afternoon we visited the Lake Patzcuaro area and were entertained by a Mexican "old men with canes dance" during the assimilation of a great Mexican lunch and a superb open bar including excellent Mexican beer (I strongly recommend La Bohemia). At night we all enjoyed a magnificent organ recital by a noted organ master in the ancient cathedral of Morelia. The organ there is stated to be one of the largest in the western hemisphere. Bach and other less well-known composers were much enjoyed in the exceptional acoustic atmosphere of the cathedral.

On Friday evening we held the Presidential banquet and dance and I must add that our Mexican hosts most certainly both enjoyed themselves and saw that we personally had a good time. The music was superb. This event was associated with a most intriguing fashion show of classical local Mexican and Indian attire presented by the daughters of prominent Morelian families. On Saturday following formal closure of the meeting, we journeyed by bus to the El Tapatio in Guadalajara where we enjoyed a final dinner de amigos at this mountain top hotel.

At a time when to each of us our world seems some days most strange and difficult to understand, and also at a time when friendship between countries of the world is bothered by lack of understanding and communication, the Medical Society of the United States and Mexico is unique indeed. As the Society now enters its next 25 years of active function, I would like to say that it has opened to me long-term friendships on both sides of the border and that I have never regretted any time donated to the same. This even includes great shopping disasters in which my wife, Joan, assumed a leading role. For those of you who may want to participate in something really different, scientifically fulfilling and just plain fun, I recommend membership in the Sociedad Medica de Estados Unidos y Mexico. That membership is by invitation, but I would suspect that any person interested in the same would have no problem finding a present member to support his application. Our membership roster is current through to 1983 and a copy may be obtained, and also application forms, from Mr. Kevin Walker, our superb Executive Secretary, 810 West Bethany Home Road, Phoenix, Arizona 85013.

For now, Adios Muchachos!

Earl J. Baker, M.D.
El Presidente, con Cluido

Correspondence

Editor—

I am responding to an address by Robert Bulla, president of Arizona Blu Cross/Blue Shield, entitled "Health Care Industry in Crisis," which appeared in the October 1983 issue of *Arizona Medicine*. Mr. Bulla discussed the ever escalating costs of providing health care, as well as pointing out tha these costs are rising at triple the inflation rate. He placed a fair share o the responsibility for these costs on th hospital industry, as well as the lack of physician, hospital and consumer incentives to achieve a cost effective system. All the principals involved in the system came in for a share of criticism with one notable exception— the insurance industry, including the Blues. In fact, not only did the insurance industry escape any critical comment but it was given credit by M Bulla for having "improved access to care and built one of the best developed health care systems anywhere."

While I do not cavil about whom M Bulla did succeed in finding fault, I submit that his claim that the insuranc industry built our health care system is a gross exaggeration; furthermore, casting blame all around for the financial failures of the system without accepting its own culpability is a gross distortion. The insurance industry has contributed more to the problem currently as well as historically than it has to the solution.

Blue Cross/Blue Shield of Arizona ha placed its bets with a Preferred Provide Organization called Select Care, stating that "It's a new way to manage health care." The new way banks on discounted medical and hospital costs for Blue Cross/Blue Shield's selected groups of clients. While this may temporarily reduce costs to clients of the Blues, who is going to pick up the 35%, 45% or 55% hospital rate increases that Blue Cross decrys? When business organizations such as hospitals offer discounts to select groups, is it not predictable that less favored clients will be required to make good the discount?

When the Blues talk about "a new way to manage health care," it is helpful in critiquing their hopes and claims for a resolution of our current problems to have a certain precision in the use of terms such as health care. The fact is that no part of the insurance industry manages, insures or reimburse health care. What the insurance ustry, including the Blues, insures is noderately expensive medical care tem, a very expensive surgical care tem and a hospital care system that is of control for all the reasons that . Bulla cites. This is the complex tem currently in place which is voted to the care of the sick and ured of our society. However, it is a health care system. It is deceptive describe it as a health care system, cause it implies to society that health product that can be uniformly nd and purchased in the system. e fact is that nutrition, physical ivity, drugs, alcohol, cigarette oking—in other words, one's style—have a far greater influence health and the costs of maintaining alth than the complex system of dical, surgical and hospital care.

Changes in the current American estyle would have a greater beneficial ect on the costs of the system than scheme of regulation, hospital centives or physician incentives. orge Blackburn, M.D., Ph.D. of rvard Medical School has estimated t the control of obesity alone would ult in a 25% reduction in the total sts of the complex system of medical re! The insurance industry's own uild and Blood Pressure Study of 79" has delineated the marked ociation between increased rbidity and obesity. For example, at e 50% overweight level, men have a % increased mortality rate; at the 0% overweight level, 40-year-old men ve a 12X increased risk for sudden ath. Blackburn has stated for the last years that obesity at the 40 pound erweight level is a disease entity. His lleagues in Boston and researchers at e Mount Sinai Medical Center in eveland have demonstrated that a mprehensive treatment program hich Blackburn describes in Conn's Current Therapy" is safe and effective d yields promising long term results.

What has all of this to do with the surance industry, including the Blues? r one thing, the industry refuses to imburse obese patients for medical eatment even though treatment has een successful in reducing risk factors r coronary artery disease, ypertension, diabetes mellitus, type II, all bladder disease, breast and ndometrial cancer in women, and ancer of the pancreas and colon in en. Although the industry recognizes e cost savings potential for itself and ealth effectiveness potential for ociety by providing benefits for proven nd effective therapy, it is disinclined to ake any changes at this time in its ttitude about treatment of obesity, ven successful treatment of pathologic besity.

In my opinion, only dreamers and wishful thinkers believe that the Blues' strategy of DRGs and PPOs is going to result in cost saving to society as a whole. Perhaps the "new way to manage health care" will be temporarily effective for the Blues' select clients, but it will only be at the expense of society as a whole. One scheme after another will be tried and found wanting until there is a marked emphasis on decreasing utilization of the system.

The insurance company's failure to follow-up on their own report about obesity, morbidity and mortality has contributed to the problem of overutilization and increased medical costs. We will know that the industry, including the Blues, are serious about solving the "Health Care Crisis" when they recognize all facets of it and stop indulging themselves in the claim of having built the best developed system anywhere.

Robert E. T. Stark, M.D.
Phoenix

Editor—

I read with interest the reprint of Robert Bulla's speech in the October issue of *Arizona Medicine.*

There appears to be a perception among some people in Arizona that not only have hospital costs risen at rapid rates, but that an oversupply of hospital beds is a major contributing factor to these rising costs. Mr. Bulla quoted a figure of thirty percent in connection with a trend line estimate of rising hospital costs. The inference is that hospital rate increases are rising at this level. This figure, as he later notes, includes more intensive utilization of services, increases in the shift of costs which the federal government refuses to pay for Medicare as well as increases in rates for services. According to the Department of Health Services, Arizona hospitals are requesting rate increases averaging approximately ten percent during 1983. This represents a decrease from the average figure of sixteen percent reported in 1982, and is reflective of hospitals' efforts to be cost-effective and to respond to public concern about rising hospital costs.

As to the theory that an oversupply of hospital beds is the cause of the cost spiral, Arizona's supply of beds per 1,000 people is well below the national average—3.42 per thousand as compared to 4.37 nationally.

In spite of these facts, costs for health care are increasing and people's concern about these costs is real.

Solving the problem of rising health care costs is the Arizona Hospital Association's number one priority. In pursuing that goal, we have repeatedly said that not only hospitals but physicians, insurance companies, business, labor representatives, government, and the public need to be involved. We were all part of the creation of the system that we have now, and we all need to be part of the solution.

To effect real change, the incentives driving our system must change. This must be done for both supply side factors—hospitals and physicians—and demand factors—insurance, government, and consumers. We believe that the best way to control health care costs is to move toward a more market-driven system in which the forces of supply and demand will work to control costs in a competitive environment. In order for this market-driven system to work, consumers—from the general public to the large corporations—must know what health care options are available to them and have information on which to make cost-effective purchasing decisions. To assist people in this endeavor, the Hospital Association began a three year public education program in June of this year.

As to the supply side, hospitals have been meeting with representatives of the Arizona Coalition for Cost Effective Quality Health Care (Motorola, Garrett, Sperry, Honeywell) for the last five months. We have reached tentative agreement on several issues, but apparently, irrespective of that agreement, the Coalition has decided to file its long-threatened initiative. We remain open to working with any groups who are interested in solving the problem of health care costs, including business groups, the legislature and the physician community.

Ronald D. Krause
President
Arizona Hospital Association

Editor:

We are delighted to see the editorial on peer review prepared by Marshall Block, M.D., the Editor of *Arizona Medicine* and also the President of the Board of Directors of the PSRO for Northern Arizona (NAMES).

We certainly agree with Dr. Block's philosophy that many more physicians should be involved in this program so that they will be in a position to understand and contribute to its responsibilities.

There is one slight error in Dr. Block's editorial. The physician membership in the PSRO for Southern Arizona, Arizona Physicians Review Organization, is slightly in excess of 50% and has been for the past several years. This is the result of a continuing effort by the membership and the Board of Directors to inform and encourage their fellow practitioners to participate in the activities of the Arizona Physicians Review Organization.

Once again, we commend Dr. Block for a very insightful article concerning the need for professional involvement in the review of both utilization and quality of medical care.

Thomas P. Finley
Executive Vice President
Arizona Physicians
Review Organization

Reply by Editor—

The figure quoted in my editorial of October 1983, page 706, was obtained from Mr. Finley himself at an informal meeting held in May. The difference of approximately ten percent again emphasizes the low percentage of physicians who are actually members of the Southern Arizona Peer Review Organization. It underscores the need for greater physician participation in these activities if we are to maintain an active role in these processes.

Marshall B. Block, M.D.

CONFLICTS in Medicine

WHAT I LIKE ABOUT YOU, DOCTOR, IS YOU TREAT ME AS AN EQUAL!
BART WHIT-MAN

Library Talk

a Rivista E Mobile
r Serials are Fickle

ertha R. Almagro

Paraphrasing Verdi's famous aria "La onna e mobile" from his well known era "Rigoletto" to highlight the predictable characteristics of serial blications (journals and numbered lumes) is quite appropriate, rticularly when one gets to work with em on a regular basis. Serials are the ete noire" of librarianship, as they e cranky, changeable, erratic, and dividual to the extreme. They emand close attention to detail, and at sixth sense which alerts one to the vareness that something is "not quite ght."

Serials can be afflicted by a large umber of problems such as: lateness publication, mail delays (sometimes ey never arrive), changes in umbering, date, frequency, format, litting of titles, mergers, publishing oblems, payment problems, etc., all which results in an incredible nount of work, phone calls, letter iting, and record changing. Serialists brarians working with serials) are nafide sleuths, and just like real-life etectives must face arduous and metimes unrewarding cases.

Serials like humans go through a full life cycle. They are born (a new title is published), get married (merge), divorce (split), and finally die (cease publication). All these peculiarities create labor-intensive situations for the serialist, who must cope with an infinite variety of situations. Let's turn to frequency to enumerate some of the problems. There are numbers that mix-up sequences and paginations, and sometimes dates. Occasionally there is more than enough material for a regular number, and the publisher decides to release it in several parts. Some titles appear "every once in a while," while others are not published consecutively. At times quarterly publications take several years to make a volume, and there are annuals whose last number was published five years ago. If all this sounds confusing, it is, and keeps the serialist in a continous state of suspense.

One of the most frustrating problems besieging the serialist is caused by the publisher's propensity to institute title changes. Granted there may be a legitimate reason for such action, however, the average title change is usually arbitrary and unnecessary as it does not reflect changes in the scope, direction, or terminology of a discipline. Some examples follow to illustrate this practice, and the havoc they create for the serialist and the library users.

Journal of obstetrics and gynecology changed to Journal of gynecology and obstetrics

Journal of tropical pediatrics, changed to Journal of tropical pediatrics and child health; changed back to Journal of tropical pediatrics; changed to Journal of tropical pediatrics and environmental child health; changed back again to Journal of tropical pediatrics

Orthopedic nursing changed to Orthopaedic nursing

Group practice changed to Group practice journal

Group psychotherapy, psychodrama and sociometry changed to Journal of group psychotherapy, psychodrama and sociometry

Otolaryngology and head and neck surgery changed to Otolaryngology—Head & neck surgery

Splitting titles is another dreaded practice, wonderfully illustrated by the journal *Social Science and Medicine*. It began publication under this title, and then it split into:

Social science and medicine. Part A: Medical sociology.

Social science and medicine. Part B: Medical anthropology

Social science and medicine. Part C: Medical economics

Social science and medicine. Part D: Medical geography

Social science and medicine. Part E: Medical psychology

Social science and medicine. Part F: Medical and social ethics.

It was later recombined into *Social Science and Medicine*, causing chaos among serial catalogers and considerable collective expense. These changes impact on the availability of the title, since they interrupt public access while the material is being reprocessed. It also affects shelving, compounding the general state of confusion. Take for example the case of *Addictive Diseases*, changed to *Chemical Dependencies*. Volumes under the first title are located at the beginning of the alphabet, while volumes under the new title are shelved six aisles away.

The inordinate amount of staff time and money spent on these and many other futile changes could be better used in pursuing a number of meaningful activities, such as reviewing existing subscriptions to assess their worth, selecting new titles to enhance the value of the collection, processing claims, etc.

Serialists live with frustrations; those resulting from the problems created by the publishers, and those resulting from the inability to serve the users when their requests cannot be immediately met. At this point, it is timely to cite the words of a well-known serialist who summed up the whole situation with these simple and accurate words: "Nothing stays the same in any phase of serials . . . only one thing is certain, if one gets rid of one problem there will always be another."

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om: Assistant Librarian for Processing rvices, University of Arizona Health Sciences brary, Tucson, Arizona 85724.

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

PUBLIC RELATIONS COMMITTEE

The Public Relations Committee met on October 22, 1983.

The committee reviewed and approved a final draft on the Media Awards brochure.

A report was received that 38 media requests have been referred to appropriate members of the Respondents Panel during the past seven months.

Update report on the "Buckle Up Your Baby" campaign . . . Received.

Patient Information Newsletter: A dummy front page for 8½ x 11 inch and tabloid size newsletter was displayed and reviewed by the committee. The committee voted to use the tabloid format if the cost is not prohibitive. Four issues of the newsletter are to be published the first year, each issue to contain an article on a specific disease; a "how to" article providing information on such subjects as how to talk to your doctor, how to have records transferred, etc.; brief health tips; and a "second opinion" feature. The newsletters are to be written in lay language and convey a positive image of the medical profession. Two complimentary "waiting room copies" are to be distributed to members, with additional copies sent to legislators, educators, libraries, etc., depending on the cost.

Media Dinners: A series of dinners are planned to be held for selected top level management representatives of the print and electronic media and representative ArMA members, probably officers, directors and members of the Public Relations Committee. The purpose of the meetings is to express organized medicine's concerns and to develop a better working relationship between medicine and the media. The first dinner is to be held at the ArMA building, with subsequent dinners to be held in the other counties throughout the year. The first dinner meeting is tentatively scheduled for mid-January, 1984.

The list of long range goals developed by the committee in July was reviewed, with members asked to indicate with a plus or minus those goals they wished to see developed. A plus indicates approval; a minus, nonapproval; plus/minus, no position. The tally sheet is attached to these minutes. *(The tally sheet will not be reproduced in this column but one may be picked up at the ArMA office.)*

Dr. Nieri suggested that the Legislative Committee consider developing a program whereby legislators would be invited to spend a day with a physician when the legislature is not in session.

The U. of A. Cancer Center newsletter was reviewed and the committee decided this publication should no longer be included in *Medical Memo* mailings because of high mailing costs and, also, because most physicians are already receiving two or three copies of the newsletter.

The need for an aggressive public education/public relations program was discussed, with Dr. Nieri reporting that the cost of such a campaign would be prohibitive. Dr. Nieri suggested that the Public Relations Committee concentrate on the patient information newsletter and the media dinners at this time.

EXECUTIVE COMMITTEE

The Executive Committee met on October 29, 1983.

The committee reviewed a request from the Arizona Ecumenical Council for ArMA participation in a statewide "Conference on Hunger in Arizona" in April 1984, and it was agreed that the Council be informed of the Association's position regarding sponsorship of programs but advised that ArMA would be happy to carry an article on the conference in a future issue of *Medical Memos*.

The October 12, 1983 inquiry from Dr. W. Sundin Applegate regarding ArMA's dues structure and the reduction of dues for "government employed physicians" was discussed by the committee. It was noted that the bylaws were very explicit in their definition of those who fell under the category of "Service Members," which includes "the permanent medical officers of the Veterans Administration who reside in Arizona." There was some concern expressed about any changes which might reflect inclusion of *all* government employed physicians, i.e., federal, state, county, it being noted that those physicians employed by county or state should probably belong to ArMA on the same basis as private practicing physicians. Because, however, there was much research to be done as to numbers involved, attempts to increase membership, etc.

It was moved and carried that the October 12, 1983 correspondence from W. Sundin Applegate, M.D., together with the comments of the Executive Committee be referred to the Ad Hoc membership committee for review, comment and recommendation back to the Executive Committee.

The committee reviewed a recent request that the Association rejoin the Arizona Council of Professions and, based on past response to the group and a previous decision to no longer participate in such organization, it was moved and carried that the Arizona Medical Association not rejoin the Arizona Council of the Professions, Inc.

The request of the Hospital Medical Staff Section that ArMA offer assistance to ArHA and the Arizona Coalition for Cost Effective Quality Health Care concerning their ongoing negotiations toward lowering health care cost in Arizona was reviewed; and, in light of what seems to be an apparent standstill in the negotiations and the possibility that an initiative might be forthcoming it was moved and carried to offer the Association's service to the Arizona Hospital Association and the Arizona Coalition for Cost Effective Quality Health Care in an attempt to conciliate the matters currently under negotiation between the two organizations.

As expressed during the joint meeting of the ArHA/ArMA Executive Committees on September 23, 1983, the desire for a liaison committee between the two organizations was discussed and it was moved and carried that the ArMA Representatives to a Liaison Committee with the Arizona Hospital Association be the Ad Hoc Committee on Hospital Services, henceforth to be known as the governing council of the ArMA Hospital Medical Staff Section.

Mr. Robinson informed the committee that the Arizona Coalition for Cost Effective Quality Health Care was in process of preparing an initiative which could go to the voters and that every attempt had been made to secure a copy of that document for committee review but it is still in the possession of legal counsel. When it is available the initiative will be presented for review and discussion to determine whether the Association should take any formal position.

It was reported that with ArMA's new computer system the capability exists of establishing a doctor referral service. Until now this service was strictly handled by the county medical society. It was moved and carried that the Association proceed to establish and implement an in-house Doctor Referral Service for its members.

The committee discussed the list which identified those recipients of 1983 ArMA Student Financial Grants who were also ArMA members. It was agreed that some attempt should be ade to involve more students by way f membership in the Association and etermined that the matter be referred o the Ad Hoc Membership Committee or in-depth study, with the suggestion hat one concept which might be onsidered and discussed with Dr. ettel would be making all students utomatic members.

BOARD OF DIRECTORS

The Board of Directors met on October 9, 1983.

Dr. Kettel welcomed the members of he board to Tucson and the College of edicine, giving a brief update as to he use of available facilities. Dr. Kettel lso reminded those present of the eception, luncheon and program hich was scheduled to begin at 11:30 .m. at The Arizona Inn, indicating that aculty response to the invitation had een most impressive.

Dr. Kettel requested that he be llowed to proceed with the College of edicine activities report called for ater in the agenda, and extended ppreciation to the members for their upport of the medical school, specially with regard to interviewing f prospective students. He stated that, ontrary to national trends, the number f applicants at the College of edicine remains high. Dr. Kettel eported that the Cancer Center uilding program was proceeding in a imely fashion and hopefully they ould be breaking ground in the pring or early summer of 1984. Comment was made by Dean Kettel egarding the legislative debate which ould be occurring regarding an ncrease in the cigarette tax and ecommended ArMA support of such ncrease, since the funds derived would be used in cancer research, etc.

Dr. Robles also extended a welcome to the members and guests, following which the items on the agenda were considered and acted upon.

Mrs. Mary Eleanor Holmes, President-elect of the ArMA Auxiliary, presented the report of President Jan Lisboa regarding ongoing activities of the Auxiliary. The Board was apprised of their involvement in supporting child safety restraint legislation and their endeavors in the creation of a children's activity book and an incentive program for drivers relating to this same subject matter. Mrs. Holmes reported that, while the Auxiliary has been actively involved in "The Chemical People" to be held in November and busy finalizing the Health Career Charts for distribution, the ladies feel that one of the most vital roles they will play in the coming year is in the legislative arena by providing whatever support and assistance they can to the Legislative Committee and the Association.

It was moved and carried to confirm the appointments of E. Luis Aguilar, M.D. and Mrs. Darryl R. Stern as members of the ArMPAC Board of Directors for the term 1983-1984.

The Board reviewed and received the comments of Richard D. Zonis, M.D. regarding a proposed resolution regarding DRGs, it being the intention that such resolution be considered for submission by the Arizona delegation during the AMA Interim Meeting in December. Following discussion it was moved and carried that the Association actively support the draft resolution of prospective reimbursement of hospitals (DRGs) attached hereto marked "Exhibit A" and by reference made a part hereof during the December Interim meeting of the American Medical Association and the Arizona Delegates be so instructed. *(This resolution can be obtained from the ArMA office and will not be reprinted here.)*

Correspondence was received from AMA acknowledging receipt of the Association's nomination of William G. Payne, M.D. for the Benjamin Rush Award and recent AMA press release advising that the joint recipients of such award were Richard S. Hodes, M.D. and Samuel R. Sherman, M.D., of Florida and California, respectively.

At this point in the meeting—and notably for the first time—Mr. Robinson was informed by members of the Executive Committee that they had recently nominated him for the AMA's Citation of a Layman for Distinguished Service, and award made to a person not of the medical profession who has contributed to the achievement of the ideals of American medicine and, even though he had not been chosen to receive that award, the members felt he was most deserving of it.

Thank you letters from students receiving financial grants were received from Ansermo L. Arthur, Robert E. Cadoff, Gerardo Carlos, Ruth Henchey, Carlos C. Huerta, Paul D. McKernan, Catherine F. Pedigo, Roberto M. Rey, John L. Schaller, Lawrence P. Serrano, Laura E. Skellchock, John Stephens, John Wilson, and Barbara L. Young.

It was reported that only 11 of the 33 students receiving ArMA financial grants during 1983 had actually joined the Association. In conjunction with the review of the foregoing report, Dr. Robles advised the members that the Executive Committee during its meeting earlier in the day had discussed the same, expressed concern regarding student involvement and determined to refer the matter to the Ad Hoc Membership Committee for a more thorough review.

It was moved and carried to accept the recommendation of the Maricopa County Medical Society and appoint Rudolf Kirschner, M.D. to serve the balance of the unexpired term (October 1983 through April 1984) of Herbert N. Munhall, M.D. as a central district and member of ArMA's Board of Directors.

Mr. Robinson reported that Kevin Walker had been accepted as as one of 40 to participate in the Valley Leadership program.

The Board reviewed Resolution S-2-83, "Granting of Specialty Society Representation," which was considered by the House of Delegates in special meeting on October 8, 1983 and, due to the fact that the Arizona Society of Allergy has a national *conjoint* rather than *primary* board, referred the matter back to the Board of Directors for further review. It was moved and carried to refer the matter of allowing the Arizona Society of Allergy Specialty Society representation in ArMAs' House of Delegates to the Articles of Incorporation and Bylaws Committee, requesting that they draft a proposed resolution to change the current section of the bylaws dealing with specialty society representation criteria to allow for inclusion of the two conjoint, as well as primary, Boards as delineated by the American Board of Medical Specialties.

It was moved and carried to approve and ratify the minutes of the Executive Committee meetings held on August 19, 1983, September 9, 1983 and September 23, 1983, including those for the Joint meeting with the Arizona Hospital Association Executive Committee on 9-23-83.

It was moved and carried to confirm the appointment of Herbert L. Winograd, M.D. as chairman of the Ad Hoc Indigent Health Care Committee for the balance of the 1983-1984 term.

Report of accreditation of CME programs for Arizona State Hospital and Arizona Thoracic Society/ Arizona Lung Association for a four-year period were received.

Misty Coumbe reported to the Board on the activities of the Ad Hoc Membership Committee and briefly reported some of the results of the 10/8 solicitation letter, which so far has resulted in approximately 50 new ArMA members who did not join Maricopa County and approximately 35 "interest" postcards from other counties. The 1984 joint billing to those physicians who have been members has resulted, to date, in approximately 225 dues payments, 27 of which were for MCMS membership only, 4-ArMA only, with the remainder joining all three. However, it was noted that it was too early to make any firm determinations as to increase or decrease in membership as a result of the new "direct member" option availability.

In connection with the early October solicitation, the Board received comments which were made in response to the question, "What one thing do you feel ArMA should attempt to accomplish in the next year?" It was interestingly noted that most comments referred to things ArMA is already doing.

Mrs. Coumbe also advised the Board members that they would shortly be receiving a packet of letters emphasizing the legislative activities of ArMA with the request that each member assist the Membership Committee by signing, mailing and following up with phone contact.

It was moved and carried to confirm the appointment of Jeffrey O'Conner, M.D., as a member of the Physician's Health Committee for the term 1983-86. The Physician's Health Committee has discontinued contact with impaired physicians since such activities, by law, *must* be reported to the Board of Medical Examiners but that it was investigating possible changes in the Arizona statutes which would make it possible for the committee to continue to assist physicians in need.

The Board reviewed the recommendation of the Retirement Program Committee relating to the current employees' pension program and, following background discussion it was moved and carried to accept the recommendation of the Ad Hoc Retirement Program Committee that (1) the Association disengage from Cal Western Life Insurance Company as the administrator for ArMA's Retirement Program, 2) The Association engage the firm of Scott, Tellier & Co. to prepare the necessary actuarial work for the program, and 3) the Association engage a bank (probably Valley National Bank of Arizona) as investment advisor and administrator for the ArMA Pension Program.

GOVERNING COUNCIL HOSPITAL MEDICAL STAFF SECTION

The Governing Council of the Hospital Medical Staff Section met on November 12, 1983.

The members reviewed background information on what appeared to be an effort by Samaritan Health Services to establish an outpatient care facility in the Village of Oak Creek and responses to an inquiry relating to such activity from the chairman to chiefs of staff of various hospitals, members of the Governing Council and Sedona physicians. While it was clear that the majority of those contacted were opposed to the establishment of any facilities which, without demonstration of need, would clearly indicate self-interest rather than community concern, it was determined that no action was necessary at the present time, since Samaritan Health Services has backed off with regard to this particular project. However, it was voted by the members that similar issues would no doubt recur in the future.

The information from the AMA Hospital Medical Staff Section recently forwarded to the members for review, together with a list of AMA HMSS representatives to the December meeting, was discussed, it was determined that such materials should be sent to all members of the ArMA Hospital Medical Staff Section since, to date, not all Arizona hospitals had named representatives for the national level. It is important that the medical staffs be aware of those matters which would be considered at the December 1-5, 1983 Interim Meeting of the AMA HMSS.

One of the items discussed at length by the members was education of medical staffs regarding physicians' contracts. Dr. Shallenberger pointed out that this had been a concern throughout during the Annual Meeting of the AMA Hospital Medical Staff Section and, as indicated by the Interim Meeting outline, would be part of the basis for a program to be held on Friday, December 2, 1983, entitled "Prospective Pricing Systems for Hospitals." The Council was additionally informed that ArMA's legal counsel was in process of preparing guidelines to assist physicians when considering contracts for sale of services and it was determined that counsel be requested to give opinion on major carrier contracts which might already be available with a view to providing some type of educational program for our members and requesting county societies to do the same. Special note was made that contracts seen by members to date were void of rules and regulations which would apply after execution as well as any specifics regarding dollars and cents.

In line with some type of educational approach to physicians, membership at all three levels was brought up as one of the major items of import in order to achieve the goals and meet the needs of the medical profession; and Dr. Ward briefly outlined some of the activities of the Ad Hoc Membership Committee, soliciting any suggestions which the members might have to assist in this endeavor.

Mr. Robinson was requested to obtain, if possible, for the Council's general information, the numbers of other professionals (i.e., D.O.s, dentists, optometrists, chiropractors) in the state and the percentage of those who belong to the state organization for that profession.

In reviewing the positions taken by the Hospital Medical Staff Section during its organizational meeting, Dr. Ward commented briefly on calls received regarding appointment of physicians on hospital governing boards and after a discussion, it was the consensus of opinion that the membership of governing boards in Arizona hospitals varies and, even though the Hospital Medical Staff Section, recommends that a physician be on those boards, this could not be construed as any type of mandate.

The Governing Council did, however, believe it most important that representatives to the HMSS obtain permission and invitation to be placed on Medical Staff Executive Committee or General meeting agendas to report actions and activities of the ArMA HMSS or the AMA HMSS when appropriate. Dr. Ward agreed to contact the HMSS representatives to inquire as to how many had actually secured such privilege, how many were encountering problems, how many appearances had actually been made, etc. and report back to the Council.

It was agreed that copies of the minutes of this meeting of the Governing Council would be provided with the other materials indicated above to all representatives to the Hospital Medical Staff Section in order to keep them aware of the concerns and discussions of the Council.

The Council was informed of the determination by ArMA's Executive Committee, at the request of the Arizona Hospital Association, to request the Governing Council to serve on a liaison committee with members from ArHA. The Council agreed that request be made that ArHA representatives to such committee be members of the Arizona Hospital Association Board of Directors; that such representatives could include, but not be limited to staff.

The Council, having previously received a copy of the Coalition's initiative, was informed that legal counsel is reviewing same as to whether it could be construed to include "physicians" and as soon as the opinion was available it would be provided to the members for their review.

Dr. Westin brought to the Governing Council's attention the rules and regulations which were being developed by ADHS Division of ehavioral Services to implement the ental Health Act which had been evised in 1983 by SB 1312 and the oncerns expressed by the Arizona sychiatric Society regarding those rules nd regs. It was agreed by the members at such rules, when finalized, would npact on many hospitals in Arizona nd it was proper that this Council, rough the ArMA Executive ommittee, offer to meet with epresentatives of the Arizona epartment of Health Services to iscuss the concerns regarding the ommitment law rules and regulations nd suggest revisions in the language hich would be appropriate and cceptable in order to protect the atient's civil rights and the physicians ho would be responsible for the care f such patients.

HEALTH MANPOWER COMMITTEE

The Health Manpower Committee met n November 15, 1983.

Dr. Linkner opened the meeting by ntroducing Ms. Janine Cyr and Ms. argaret Jobes who gave the ackground of the Arizona Hospital ssociation's Physician/Registered urse Relationship Study completed in ctober, 1981. Ms. Jobes summarized he recommendations of the Task orce.

After lengthy discussion, it was decided that all members present would retain their copy of the Study and copies would be mailed to those members who were absent. All members would receive a letter asking for their opinions on the recommendations (i.e., agree, disagree, etc.). The responses should be returned by mail to the Health Manpower Committee Chairman. He, in turn, would catalogue the responses and make a report to the Board of ArMA at its next meeting.

It was moved and carried that the chairman summarize the recommendations submitted by the Health Manpower Committee members and present those views to the Board of Directors.

Dr. Linkner reported the results of a subcommittee of the Statewide Council of Nursing. Their recommendation was "that a joint nurse/physician advisory council reporting to the Board of Directors or Trustees of a hospital, be established as part of the organizational structure of every facility where doctors and nurses are working together." The Health Manpower Committee decided to enlarge upon this recommendation and it was moved and carried that the Health Manpower Committee recommend to the Board of Directors that ArMA support the following recommendation of the Statewide Council on Nursing: "A joint nurse/physician advisory council, reporting to the Board of Directors or Trustees of a hospital, be established as a part of the organizational structure of every facility where doctors and nurses are working together." We believe that this committee should be formed to promote optimal nurse/physician relationships within the hospital directed towards the promotion of the best quality patient care.

Kevin Walker gave the Committee a brief background on the development of the Physician's Assistant and Respiratory Therapy draft bills.

The Committee felt that there was no need to establish a PA board by law and that a solution could be accomplished administratively.

It was moved and carried to recommend to the legislative committee that ArMA offer nonsupport of the physician's assistant draft bill.

It was moved and carried that ArMA contact the heads of the respiratory therapy departments of the hospitals in the state, present them the draft and solicit their opinions on the need for this legislation.

At the February 25, 1983 meeting of the Executive Committee of ArMA it was moved that the Health Manpower Committee would be given the responsibility of developing a rural health program. Since the University of Arizona is already planning a Rural Health Conference, the Committee decided that there would be no point in duplicating an already ongoing program. Members from outlying areas indicated that previous Conferences were good programs but did not address the needs of rural areas. The committee also decided that it did not have the expertise to develop such a program and suggested that an Ad Hoc Committee could be formed by the Executive Committee, using rural physicians for input.

It was moved and carried that 1) the Health Manpower Committee is not the appropriate committee to develop a rural health program and 2) the Health Manpower Committee suggests that input from rural physicians should be both queried and involved and a separate Ad Hoc Committee for rural health be created.

Dr. Marilyn Heins reported on a subcommittee meeting she set up with members of other health organizations concerning the gathering of data to do long range projections on health manpower in Arizona. She stressed the lack of local statistics as compared with nationwide ones and a need for this information. This would be a project ranging over a period of time and would require funding. Dr. Heins said that she would contact the Flinn Foundation to see if there was seed money available. She added that this project would involve much time and money and asked if she should proceed with the groundwork. It was moved and carried that the subcommittee created to develop Health Manpower data should be continued.

Kevin Walker reported on the Nurse Practitioner Rules and Regulations. They have been approved by the Joint Board of Medical and Osteopathic Examiners but still have to be approved by the Governor's Commission and the Attorney General.

Kevin Walker advised the Committee that HFCA has printed a directory of physicians who accept Medicare assignments. The list is available to social security offices and groups representing the elderly.

Dr. Linkner recommended a report "Shattuck Lecture" to the Committee. A copy will be mailed to each member with the minutes of this meeting.

PROFESSIONAL COMMITTEE

The Professional Committee met on November 16, 1983.

Dr. Hanss reviewed the section of the Bylaws relating to the responsibilities of the Professional Committee and briefed members on the functions of the current sections of the committee. Members were asked to determine whether there is still a need for all the sections, as other committees may be handling the same issues. It was decided that the Section on Allied Medical Groups be terminated and the Section on Rehabilitation Medicine be combined with the Section on Aging and General Medicine.

Dr. Foerster reviewed some of the activities of the active Sports Medicine Section: *Arizona Sports Medicine* the quarterly newsletter of the section.

Preparticipation Physicians—the matter of yearly required preparticipation physicals for school athletes is being researched by two special subcommittees of the section as to whether the yearly physicals are necessary.

Sports Medicine Symposium—approximately 400 people participated in the symposium last spring. Next year's symposium will be held April 13-15. The program will again deal with subjects of interest to physicians, coaches, trainers and students.

Good Samaritan Law—the section is continuing to study how this law might be applied to health professional volunteers on the athletic field.

Arizona Athletic Trainers

Association—the section is working with the trainers in their efforts to require that athletic trainers be certified.

Committee members reviewed the proposed revised rules of the Board of Medical Examiners. A great deal of concern was expressed over R4-16-108 regarding acupuncture. The previous statute required reporting by those practicing acupuncture which provided some monitoring of the procedure. Members did not agree that acupuncture has been demonstrated as a "therapeutic modality in the practice of medicine," and since the proposed rule would eliminate the only monitoring of the precedure being done, the following action was taken: It was moved and carried that the Committee disagrees with the conclusion stated in R4-16-108 of BOMEX's proposed rules that acupuncture is a therapeutic modality in the practice of medicine and, therefore, questions the current statements regarding acupuncture unless the Board of Medical Examiners can document that it has been demonstrated over the years through the reporting mechanism that it is indeed a therapeutic modality which has proven effective.

A letter received from the Arizona School Health Association concerning the recommendation of a special task force of the State Board of Education that health and science be combined into a single course of study in grades K through 5 was reviewed by the Committee. Members felt that the combination of the two subjects would water down the amount of health education received by children and would be detrimental to their overall education. Since the date for the public hearing has passed, the Committee decided it would be appropriate to respond to the State Board of Education with a position from ArMA, and it was moved and carried to oppose a proposal by the Board of Education to combine the health and science into a single study area for grades K through 5.

Correspondence from the Study Commission on Long Term Care and the Governor's Advisory Council on Aging requesting the Association to submit testimony concerning long term care needs of functionally impaired persons, particularly the elderly, was reviewed. Dr. Charles Henderson was appointed to present testimony on ArMA's behalf, and members suggested that Dr. Henderson be commended for his effort and encouraged to participate further as might be required by the Study Commission on Long Term Care. A copy of Dr. Henderson's summary will be sent to the Board for their review.

The Board of Directors reviewed the recommendation of this Committee regarding athletic trainers and took action that ArMA support the position that anyone identified as an athletic trainer should have appropriate training and credentials as a certified athletic trainer.

A letter received from Dr. George Novalis regarding mail he received from a New Mexico physician offering homeopathic remedies for sale was reviewed. Members felt that since the state legislature created a state board of homeopathic medicine it would be unlikely that they would consider any action against homeopathic physicians. It was recommended that ArMA advise the New Mexico Medical Society of the activities of the homeopathic physician.

It was also recommended that ArMA continue to try to educate the public through the speaker respondent panel and the media.

Dr. William Helme wrote a letter to the Professional Committee concerning a letter he received from the University of Arizona and questioning the ethics of what he felt was their open solicitation of patients.

Dr. Hanss has recently been asked by the Maricopa County Medical Society to define the "professionalism of medicine" and asked committee members to write to him giving him their definition of professionalism. Once a definition has been established a proper answer could be given to Dr. Helme.

Dr. Kriegsfeld brought to the committee's attention his concerns regarding the number of Level I trauma centers located in Maricopa County. It was pointed out that Arizona has a disproportionate number of Level I trauma centers as compared with the total number in the United States and that there is probably not a need for this many in the state. Members felt that the Department of Emergency Medical Services would probably be the appropriate agency to determine the need for Level I trauma centers, and it was moved and carried that the professional committee recommend to the Board of Directors that ArMA recommend to the Arizona Legislature that the number of Level I Trauma Centers in Maricopa County be limited to whatever number is determined appropriate by the State Department of Emergency Medical Services.

The committee reviewed an anonymous letter from an M.D. physician associated with an H.M.O. expressing his concerns over the care given by a physician's assistant. It was expressed that the physician's assistant was established as a means of providing quality supervised care for medically underserved areas, yet it appears that most physician's assistants are working in urban areas for large organizations such as H.M.O.s. The committee felt that the supervisory aspect of the employment of a physician's assistant should be closely watched so that the appropriate supervision does exist and is not in name only, as was suggested in the letter. It was also felt that the Legislative Committee should be informed of this situation for consideration with regard to introduction of any new legislation or rules and regulations regarding physician's assistants.

LEGISLATIVE COMMITTEE

The Legislative Committee met Saturday, November 19, 1983.

Dr. Thomas Foerster discussed the background of the Good Samaritan law and the Team Physicians draft bill explaining that this bill has been long overdue. It was suggested that the Good Samaritan law be kept separate from the Team Physicians' bill so there would be coverage in both areas. The following changes in the draft bill suggested: Page 15, line 4, delete "written" and on line 5, after "community college" insert "or other amateur sports organizations."

It was moved and carried to adopt the proposed draft bill with modifications suggested above and to continue to pursue this matter and see that the bill is introduced.

1-A Physician Assistants— Mike Smith of BOMEX said that the existing Physician Assistance law passed in 1974 is a one-page law with seventeen pages of rules and regulations. The current joint Board is composed of twelve physicians, five D.O.s and three advisory members who are physician assistants, chaired by the Dean of the Medical College. BOMEX would prefer to update the current regulations and make them into law. Currently there are 177 Physician Assistants certified in the state. The present conflict is between medical efficiency and economic efficiency. After much discussion, the Committee asked BOMEX staff to provide an analysis of this draft legislation concerning the difference in the wording of the rules and regulations.

It was moved and carried to postpone action on this bill until the next Legislative meeting.

1-B Premarital Syphilis Test— Kevin Walker explained that this is the identical bill from last year which was not acted upon. The active support stand from last year will continue.

1-C Respiratory Therapy Licensure—Sandy Spellman, Arizona Hospital Association, said the ArHA has not aken a definite position, but generally does not support this bill unless it is proven to be cost effective and an mprovement of the quality of care.

The Health Manpower Committee of ArMA suggested that the heads of the Respiratory Therapy Departments of the Hospitals in the state be solicited on heir opinions for the need for this egislation. The Legislative Committee decided to wait until these responses were tallied.

1-D Periodic Payments — This bill was developed by a subcommittee of MICC with input from MICA. It was moved and carried to defer action on this bill until the next meeting.

1-E Contingent Fee Schedule — It was moved and carried to offer active support for this draft bill.

1-F Exemplary Damages — Kevin Walker explained the background of this bill and said it was probably unconstitutional in its present form. The Arizona Hospital Association is drafting a different approach to the problem. It was moved and carried to defer action on this bill until further nformation is received.

1-G Civil Immunity — It was moved and carried to refer this draft bill to the Physicians Health Committee for its recommendation.

Dr. Kurtz explained that the draft hospital bill, sponsored by Senator Kunasek, Representative Baker and Representative English, was a result of the filing of an initiative by the Coalition. The Arizona Hospital Association has been working with the Coalition but all talks have ceased since the initiative filing and they have no position at present. They are viewing the bill as a vehicle to have a forum for discussion so there will be some solution to the initiative. It was moved and carried that a subcommittee be formed to work on the problem and come up with possibilities that ArMA can support.

Dr. Belton P. Meyer gave a brief report on the recent Bioethical Consultation and suggested that it serve as a model to attempt to influence the Legislature. The Consultants at the "Baby Doe" Seminar suggested that ArMA draft legislation to be used as an alternate to current legislation that would embody the principles of ethical practices and gave specific guidelines on how to proceed. There is also a draft federal legislative bill in the works.

It was moved and carried that the Bioethical Task Force create draft legislation based upon the recommendations of the American Academy of Pediatrics, to be drafted by the first week of December.

Dr. Kurtz explained that last year small groups had been formed to work on specific upcoming legislation and these groups were very effective. He mentioned possible problems in the coming session and asked for volunteers to serve on a Task Force.

The ArMA Auxiliary is prepared to get more involved in the legislative process this year and offered its help.

William N. Nesbauer, M.D., ArMPAC Chairman, gave an updated report on membership and urged everyone present to join if they have not already done so.

It was agreed to have a legislative reception again this year. Date will be February 21, 1984.

The Physician for the Day committee agreed to continue the program for the 1984 legislative session.

Drunk Driving — Interest was expressed in a rehabilitation program for drunk drivers. The New York City report was cited as a model and it will be discussed at the next meeting.

EXECUTIVE COMMITTEE

The Executive Committee met on November 18, 1983.

Mr. Mathis, the Director of the Department of Health Services, updated the committee on department activities, which included an investigation regarding the use of aspartame in beverages and a petition requesting the ban of beverages containing this substance in the State of Arizona; concern over the latest media coverage of the AHCCCS program and the ongoing interview process to secure a medical director for such program; and Mr. Mathis' request that the Governor create a medical advisory committee to assist him as matters required. In regard to this latter item, Mr. Mathis did, in fact, request and received the committee's support of his endeavor.

The committee received for information the minutes of a meeting held on November 9, 1983, relating to the health care for the "notch group" in Maricopa County, as well as heard the comments from Dr. Baker on that meeting and a luncheon meeting held 11/17/83, the first of a series to be held with the Maricopa County Board of Supervisors. Dr. Baker additionally commented on a most valuable AHCCCS article published by Maricopa Medical Center as well as a recent letter sent by himself and Dr. Winograd to the editor of the *Phoenix Gazette* dealing with AHCCCS, the care of the "notch group," and services previously rendered by the Maricopa Medical Center.

The initiative recently filed by the Arizona Coalition for Cost Effective Quality Health Care, previously forwarded for committee review, was discussed at great length, and the committee received written memoranda as well as oral comment from legal counsel. It being determined that, after only a cursory review, the initiative could be deemed to include physicians as well as hospitals, Mr. Jacobson was requested to make a further, in-depth review of the document and prepare a final report for the Board of Directors during its January meeting, when it would consider taking a formal position on the matter.

It was moved and carried to reaffirm and implement the action taken by this Executive Committee on October 29, 1983, to offer the Association's service to the Arizona Hospital Association and the Arizona Coalition for Cost Effective Quality Health Care in an attempt to conciliate the matters currently under negotiation between the two organizations.

The recent request of the AMA for recommendations for appointments to the Council on Medical Education and various committees was reviewed and the committee informed of Pima County Medical Society's suggestion that Dr. Morton Fuchs be considered for recommendation.

It was moved and carried to accept the suggestion of the Pima County Medical Society and recommend Morton Fuchs, M.D., for appointment by the American Medical Association to its Council on Medical Education or one of various committees, with Mr. Robinson directed to contact Dr. Fuchs directly to determine in which he would be most interested.

Mr. Robinson reported to the committee regarding a proposal by Dr. Scott Chisholm that the Association consider a provision for sunseting the action taken by ArMA's House of Delegates, i.e., declaring that all policies older than five years would automatically become null and void. The committee was advised that other associations had, in fact, adopted such a system to deter the filing of lawsuits and FEC activities relating to positions previously adopted by their governing bodies. It was the consensus of the members that this, in fact, would be appropriate due to the fact that many policies previously adopted by the Association were outdated but remained in force and directed Mr. Robinson to prepare a resolution to accomplish the establishment of such a system for review by the committee during the next meeting.

A request for support from the

National Organization on Disability was reviewed by the committee and it was moved and carried that the Association, in accordance with its established policy regarding contributions, advise the National Organization on Disability, that ArMA would be unable to offer financial support as requested in its October 7, 1983 letter.

It was moved and carried to approve the printing, at ArMA's cost, of membership letters for the personal signature of Drs. Louis J. Kettel and William C. Scott. It was moved and carried to approve the membership committee's recommendation that retired physicians, previously members in good standing of another state association, be encouraged to join ArMA at an associate membership status.

The Executive Committee received, for information, the Membership Committee's recommendation that voluntary enlistment of medical student members be reevaluated once the current recruitment effort is complete and that service membership be maintained at its current level, i.e., those in *federal* service.

The committee received, for information, the number of new applications received by ArMA to date, and discussed activities in Yavapai and Pima Counties relating to deunification.

Mr. Walker reported on current ArMPAC solicitations which have resulted in 475 ArMPAC members to date—the highest in the history of the organization.

The committee reviewed actions taken by the Professional Committee in meeting on November 16, 1983 and it was moved and carried to endorse the action taken by the Professional Committee on November 16, 1983, setting forth that committee's disagreement with the conclusion stated in R4-16-108 of BOMEX's proposed rules that acupuncture is a therapeutic modality in the practice of medicine and questioning the current statements regarding acupuncture unless the Board of Medical Examiners can document that it has been demonstrated over the years through the reporting mechanism that it is indeed a therapeutic modality which has proven effective.

It was moved and carried to support the November 16 action of the Professional Committee to oppose a proposal by the Board of Education to combine the subjects of health and science into a single study area for grades K through 5.

A request for support of a tennis tournament for ArMA members from the Scottsdale Granada Royale Tennis Center was received and reviewed by the committee, and it was moved and carried to thank the Scottsdale Granada Royale Tennis Center for its offer to arrange a tennis tournament for physicians but that the association does not participate in outside social activities for its members and, therefore, must decline the proposal.

Report by Dr. Robles on recent meeting with Mr. Packard, President of the Arizona Physical Therapy Association as part of that Association's efforts to open dialogue with various other organizations . . . Received.

MEDICAL EDUCATION COMMITTEE

The Medical Education Committee met on December 8, 1983.

Dr. Trahern briefed the committee on the items discussed at the half-day ACCME meeting. The protocol for re-recognition of states as accrediting bodies was established and a survey questionnaire to be completed by states was introduced.

ArMA has recently received a copy of this questionnaire for approval, suggestions and comments. ArMA is scheduled to be surveyed for recognition in 1986.

At the AMA Conference DRGs and their relation to medical education was discussed. The question of whether the Physician's Recognition Award requirements should be changed was brought up, but the decision was made that it should remain the same for the time being. There was also a presentation by a computer firm on the use of computers for medical education programs.

Dr. Hastings reviewed the recommendations of the Section concerning the accreditation of Phoenix Indian Medical Center, Desert Samaritan Hospital and Health Center, and St. Luke's Medical Center. It was moved and carried to approve continued full accreditation of Phoenix Indian Medical Center, Desert Samaritan Hospital and Health Center, and St. Luke's Medical Center for continuing medical education for a period of four years.

Blood Systems, Inc., a blood collection and distribution center, was also recently surveyed. Both the survey team and the Section of Accreditation felt that since Blood Systems is an interstate corporation and several of their meetings would be held in other states, they should seek national accreditation, but in the meantime ArMA should grant them provisional accreditation for a period of two years. It was moved and carried that Blood Systems, Inc. be granted provisional accreditation for a period of two years only and should be urged to start application for national accreditation as soon as possible.

The Section on Accreditation met earlier this evening and reviewed the materials received from the ACCME regarding the protocol for states as accrediting bodies and the survey questionnaire. It was the decision of the Section that the seven essentials of the ACCME be adopted by ArMA. A mission statement will need to be developed and the survey materials now being used must be rewritten to incorporate the essentials. An appeal process for organizations denied accreditation will be established. One of the new policies will be that any accredited organization must report any major changes in the CME program to ArMA right away or risk loss of accreditation. Dr. Trahern reiterated the need for survey team participants. Next year there will be approximately ten organizations to be surveyed.

The ACCME has requested one name in nomination for membership on the Committee for Review and Recognition of the ACCME. Five members will be selected from among the state nominees and two members will represent the ACCME. Dr. Trahern's name will be submitted. It was moved and carried to recommend that the Medical Education Committee not be involved at present since the Health Manpower Committee is gathering data on the matter of physician supply.

The new BOMEX rule regarding continuing medical education requirements was reviewed. It was noted that under the new rules programs provided by organizations or institutions *not* accredited by the ACCME would be acceptable for credit. This would appear to allow any organization or group to conduct CME activities and receive approval without any monitoring of quality, motive, etc. and would encourage further proliferation of for-profit CME programs.

It was moved and carried to recommend that BOMEX reconsider Rule No. R4-16-102-B.5, which appears to nullify any constraints on quality of continuing medical education activities receiving BOMEX approval for licensure.

GOVERNMENTAL SERVICES COMMITTEE

The Governmental Services Committee met on December 13, 1983.

Block Grants are available in four areas relating to Alcohol and Drugs, Preventive Care, Maternal and Child Health and Primary Care.

Alcohol and Drugs— will be impacted by legislative hearings scheduled for April and May of next year.

Preventive Care— legislative hearings are involved and new mechanisms envisioned. DHS will help draft material.

Maternal and Child Health— grant is not subjected to legislative hearings. Four to five million dollars split 2/3 with Maternal and Child Care and 1/3 with Crippled Children. Most of the funds were subvented to counties. In Maternal and Child Care, $1 million of the $3 million is devoted to perinatal care.

Primary Care— Legislature does not desire to match federal block grant so we have no involvement. Mechanisms are such that various primary health centers can apply for funds to be directed to them.

There is a new effort regarding the State Health Plan. Under current leadership, DHS requested a federal review and they were very critical of the current process.

The main criticism is lack of relevance, related to lack of involvement of those who deliver services. They are in the process of developing statutes to address these areas.

The main impact of AHCCCS is on perinatal care to indigent mothers. Arizona ranks, overall, 50th in the nation in perinatal care.

WIC— Contrary to rumor, the nutritionists are well coordinated with physicians and nurses in this program.

Budget Cuts for DHS— Fifteen percent for Child Care with elimination of the Crippled Children's program. The Governor has never allowed DHS to work in the Legislature toward enactment of programs that he has not endorsed. This year, the Governor gave his permission. He has approved a $1 million program for perinatal care. Because of the cut in funds for maternal and child care and crippled childrens' statements of a very negative nature have been submitted. Dr. Clement volunteered to act as liaison between the Governmental Services Committee and DHS.

Behavioral Health Services— has been abolished and the state hospital director will report directly to Don Mathis, Director, DHS. The Bureau of Community Behavioral Services and the Southern Arizona Mental Health Bureau are reorganizing as a planning group and will write a new plan for behavioral health and then will disband and report to the DHS Director.

Current Regulation Initiative— there are outside elements proposing governmental mechanisms for dealing with how health care matters will be interpreted in the future. Dr. Manley briefed the committee on his attendance at the Consortium meetings and explained the problems they are working on. He stressed that ArMA should try to put the physicians back into leadership positions.

A suggestion was made to recognize the problems of escalating costs and support voluntary health care; to insist that physicians have input to all groups doing health planning; and to resist changes that have a deleterious effect on health care.

Mrs. Rounseville advised the Committee that the ArMA Auxiliary has a core of workers in each county who are more than willing to do whatever is necessary to help.

Notch Group— Dr. Baker told the Committee about the meetings of Herbert L. Winograd, M.D.,'s committee with the Board of Supervisors. He said a stop-gap solution has been found but a long-term solution must be forthcoming.

It was agreed that the Health Planning Section, under Dr. Peltier's chairmanship, would work closely with Dr. Baker and Dr. Meyer on the current regulatory proposals. Dr. Manley was asked to act as liaison with the Committee, and Mrs. Rounseville was asked to participate. The problem of most concern is quality of health care.

Drunk driving alternatives— this is a program that Allan Stanton is very interested in. New York State has a proven rehabilitation program that is cost effective and data is being secured from that state. Dr. St. John was asked to become involved in the development of a proposal for Arizona.

Statewide Health Coordinating Council— once again, ArMA needs to nominate provider members to this Council. It was moved and carried to nominate H. Belton P. Meyer, M.D., and John Kennedy, M.D., for the statewide Health Coordinating Council and to serve on the State Health Planning Advisory Council for the term expiring January 1986.

WIC report— Dr. Kossuth briefed the Committee on the research he has been doing on sodium content in foods. The AMA has repeatedly, in Resolution and Council Reports, emphasized the need to reduce sodium in the American diet. Dr. Kossuth advised that he had done an evaluation of a supplemental food program for women, infants, and children (WIC) which found excessive sodium content in their diets. A look at the school lunch programs, the foods at the day care centers, nursing homes, prisons, meals-on-wheels, the Veteran's hospital, etc. suggests that the AMA effort to reduce sodium in the American diet has not reached the hinterlands. It was moved and carried that the Governmental Services Committee recommend to the ArMA Board of Directors that an Ad Hoc Committee on sodium (reduction in the Arizona diet) be established with appropriate physician specialty membership (internal medicine, pediatrics, cardiology, preventive medicine) and invited membership from Arizona Heart Association, Arizona Dieticians Association and State Department of Health Services to further investigate the sodium content in the American diet.

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE

The Articles of Incorporation and Bylaws Committee met December 17, 1983.

The Committee reviewed and discussed the application of the Arizona Society of Allergy for representation in ArMA's House of Delegates, which had been referred to the Board following the special meeting of the House of Delegates on October 8, together with the October 29 action of the Board of Directors requesting this committee draft a resolution which would amend Chapter VIII, Section 2(c)(A) of the ArMA bylaws so as to include the two conjoint boards recognized by the American Board of Medical Specialties. It was moved and carried to recommend to the Board of Directors that Chapter VIII, Section 1(c)(A) of the Association bylaws be amended to read as follows:

"(A) The specialty has a national board recognized as a primary or *conjoint* board by the American Board of Medical Specialties."

And that the resolution to accomplish this amendment, attached hereto marked exhibit "A," be submitted by the Board of Directors at the 1984 Annual Meeting of the House of Delegates. *(A copy of the resolution can be obtained from the ArMA office).*

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

JANUARY 1984

Musculoskeletal Diseases in the Aged
January 26-28. Point Tapatio Resort, Phoenix. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 N. 19th Street. Phoenix, Arizona 85006. Approved for 16 hours of Category 1 credit.

Today's Challenges in Allergy and Immunology
January 28. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 7 hours of Category 1 credit.

ECG Interpretation and Arrhythmia Management
January 27-29. Marriott Hotel, Tucson. Sponsor: International Medical Education Corporation. Contact: IMEC, 64 Inverness Drive, East, Englewood, Co. 80112. Telephone: 800-525-8651 or 303-790-8445, ext. 123. Approved for hour per hour Category 1 credit.

FEBRUARY

Third Annual Critically Ill Child Symposium
February 2-4. St. Joseph's Hospital and Medical Center, Cullen Memorial Building, Phoenix. Sponsor: St. Joseph's Hospital and Medical Center, Department of Pediatrics. Contact: Kathy Volpe, Pediatric Education, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona 85013. Approved for 15 hours of Category 1 credit.

Current Perspectives V: Cancer
February 4. ArMA Building, Phoenix. Sponsor: Arizona Medical Association, Inc. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Category 1 credit.

Clinical Problems in Adolescent Medicine
February 11. Phoenix Hilton. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for seven hours of Category 1 credit.

Arizona ACEP 1984 Scientific Assembly
February 13 & 14. Sunburst Hotel, Scottsdale. Sponsor: Arizona Chapter of ACEP. Contact: Doug Allen, Executive Director, 246-1551. Approved for 12 hours Category 1 credit.

Eleventh Annual Barrow Neurological Symposium—Stroke
February 13-15. La Posada Resort Hotel, Scottsdale. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., 222 West Thomas Road, Suite 415, Phoenix, Arizona 85013. Approved for hour per hour Category 1 credit.

Inaugural Seminar of the American Association of Orthopaedic Medicine Medical Approaches to the Low Back
February 15-19. La Posada Resort, Phoenix. Sponsor: Maricopa Medical Center Department of Anesthesiology. Contact: Kent Pomeroy, M.D., Secretary-Treasurer, American Association of Orthopaedic Medicine. Approved for 28 hours of Category 1 credit.

Frontiers in Ophthalmology
February 16-18. Mountain Shadows Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Medical Center, 525 N. 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

Seventeenth Annual Southwestern Clinical Pharmacy Seminar: Therapeutic Drug Monitoring
February 17-19. Ramada Inn, Tucson. Sponsor: U. of A. College of Pharmacy. Contact: Jack R. Arndt, Ph.D., College of Pharmacy, U. of A. Health Sciences Center, Tucson, Arizona 85721. 9 hours of Category 1 credit applied for.

Trauma Care '84 — National Symposium on Trauma
February 20-22. Metrocenter Holidome. Sponsors: John C. Lincoln Hospital & Health Center, University of Arizona College of Medicine, LIST, EMC, & AEMS. Contact: Elaine Nairn, Symposium Secretary, c/o John C. Lincoln Hospital & Health Center, 9211 North Second Street Phoenix, Arizona 85020. Physicians approved for 16.5 hours of Category 1 credit, nurses 19.8 CEUs.

26th Annual Meeting South Central Association of Blood Banks
February 19-22. Albuquerque Regent and Convention Center, New Mexico. Sponsor: South Central Association of Blood Banks. Contact: Linnelle Wilson, Executive Director, South Central Association of Blood Banks, P.O. Box 4679, Austin, Texas 78765. Approved for 28 hours of Category 1 credit.

Advances in Obstetrics and Gynecology
February 22-24. Scottsdale Hilton. Sponsor: Maricopa Medical Center: Contact: John V. Kelly, M.D., Department of OB/GYN, Maricopa Medical Center, 2601 E. Roosevelt, Phoenix, Arizona 85008. Approved for hour per hour Category 1 credit.

Anesthesia for the 80's — 10th Annual Meeting
February 24-26. Scottsdale Hilton, Scottsdale. Sponsor: Arizona Society of Anesthesiologists and Department of Anesthesiology. Contact: Beverly Richter, Arizona Society of Anesthesiologists, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 15 hours of Category 1 credit.

Emergency Care Update VI
February 27-29. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, University of Arizona Health Sciences Center, Tucson, Arizona 85724. Approved for 23 hours of Category 1 credit.

Southwestern Seminar on Recent Advances in Neurology and Neurosurgery
February 29-March 3. Sheraton El Conquistador, Tucson. Sponsor: University of Arizona Health Sciences Center. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 13.5 hours of Category 1 credit.

MARCH

5th Annual Sports Medicine Symposium Olympic Medicine
March 8-10. Marriott Hotel, Tucson. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona. Approved for 19.5 hours of Category 1 credit.

"Focus 84" Respiratory Muscle Function and Physiology
March 8-10. Registry Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Medical Center, 525 N. 18th Street. Phoenix, Arizona. Approved for hour per hour Category 1 credit.

Training in Structural Family Therapy
March 8-12. Arizona Family Learning and Communication Center. Sponsor: Philadelphia Child Guidance Clinics. Contact: Arizona Family Learning and Communication Center, Metro Medical Plaza B-403, 3201 West Peoria, Phoenix, Arizona 85029.

Tenth Anniversary Winter Update: 1974-1984
March 16-18. Tucson Marriott Hotel, Tucson. Sponsor: University of Arizona College of Medicine, Arizona State Assn. of Physician Assistants. Contact: Susan Stumpf, PA-C, 630 N. La Cholla Blvd., Tucson, Arizona 85745. Approved for 18 hours of Category 1 credit.

Tenth Annual Maricopa Medical Center Urological Seminar
March 17-18. The Cottonwoods, Scottsdale. Sponsor: Maricopa Medical Center. Contact: James H. McDonald, M.D., Chief of Urology Service, 2601 East Roosevelt Street, Phoenix, Arizona 85008 or Wilfred M. Potter, M.D., Scottsdale Urology Associates, Ltd., 3604 Wells Fargo, Suite B, Scottsdale, Arizona 85251. Approved for 14 hours of Category 1 credit.

Clinical Seminar Series What's New in the Approach to Anemia
March 17, 1984. University of Arizona Health Sciences Center. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724.

Skeletal Radiology — 1984
March 17-22. The Pointe. Sponsor: Department of Diagnostic Radiology Allegheny General Hospital, Allegheny Health, Education and Research Corporation and Allegheny Radiology Associates, Ltd. Contact: Continuing Education Services, Allegheny General Hospital, 320 East North Avenue, Pittsburgh, PA 15212-9986. Approved for 20 hours of Category 1 credit.

Current Perspectives Seminar—Diabetes
March 21. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85724. Approved for 3½ hours of Category 1 credit.

MARK YOUR CALENDAR

For These Upcoming CURRENT PERSPECTIVES SEMINARS

Presented By
THE ARIZONA MEDICAL ASSOCIATION

February 4, 1984 Saturday Tucson	Cancer Robert M. Anderson, M.D.—Program Chairman
March 21, 1984 Wednesday Phoenix	Diabetes Philip Levy, M.D.—Program Chairman
April 26, 1984 Thursday Scottsdale	The Well Adult and Aging Earl J. Baker, M.D.—Program Director

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Gastroenterology of Clinicians 1984
March 21-23. Scottsdale Hilton. Sponsor: University of Arizona College of Medicine and David C. H. Sun Memorial Institute. Contact: Jeanie Sun, 948-1064.

20th Annual Arizona Chest Symposium
March 29-31. Doubletree Hotel, Tucson. Sponsor: University of Arizona College of Medicine. Contact: Sandy Younker-Hellman, R.N., B.S.N., Symposium Coordinator, P.O. Box 42195, Tucson, Arizona 85733. Approved for 20 hours of Category 1 credit.

APRIL

Update: Primary Care 1984
April 3-6. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

The Developing Child
April 13. Registry Resort, Scottsdale. Sponsor: St. Luke's Medical Center, Behavioral Health Center. Contact: Christine Campbell, Director of Meetings, St. Luke's Medical Center, 1800 East Van Buren St., Phoenix, Arizona 85006.

Advances in Pulmonary Medicine & Appropriate Handling of Neurological Emergencies
April 14-21 & April 21-28 (2 part conferences). Lake Powell, Arizona. Sponsors: American Institute of Primary Care Medicine & the University of Arizona, College of Medicine. Contact: EPIC Expeditions, P.O. Box 209, Sun Valley, Idaho 83353. Approved for 24 hours of Category 1 credit.

Neuro-Ophthalmology at the Grand Canyon
April 25-28. El Tovar Hotel, Grand Canyon National Park. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 14.5 hours of Category 1 credit.

Current Perspectives Seminar The Well Adult and Aging
April 26. Scottsdale. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix Arizona 85013. Approved for 3½ hours Category 1 credit.

Clinical Seminar Series Diagnosis and Therapy of Cardiovascular Disorders
April 28. Phoenix Hilton. Sponsor University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 credit.

34th ANNUAL COURSE FOR PHYSICIANS IN FAMILY PRACTICE

For the 34th consecutive year, Mount Zion Hospital and Medical Center presents this postgraduate course designed for physicians in family and general practice.

To be held at Mount Zion Hospital and Medical Center, San Francisco, on Wednesday through Friday, March 7-9, 1984.

Co-Chairmen: Rene Bine, Jr., M.D.
James A. Davis, M.D.

Tuition: $225/before February 1
$250/after February 1

Credit: 19 hours in Category I

For more information, contact:

Martin Schimerlik
Office of Continuing Education
Mount Zion Hospital & Medical Center
P.O. Box 7921
San Francisco, CA 94120
414/567-6600, ext. 2404

FAR WESTERN MEDICAL ASSOCIATION

January 28—February 4, 1984
Sun Valley, Idaho

Theme: "What's New in Medicine and Surgery"

Spring Scientific Meeting
March 3—17, 1984
Cortina, Italy (first week)

Theme: "Medicine in Europe Today"

Approved for hour per hour Category I credit

Please write to:
Far Western Medical Association
P.O. Box 3817
Van Nuys, California 91407
for detailed information

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

FOCUS '84

Exercise Testing and Respiratory Muscle Function

A seminar detailing respiratory mechanics, muscle function and testing.

March 8-10, 1984
at the Registry Resort, Scottsdale

Faculty members for the three-day session will include Michael Goldman, M.D., Salt Lake City • Norman L. Jones, M.D., Hamilton, Ontario, Canada • David Kanarek, M.D., Brookline, Massachusetts • Peter T. Macklem, M.D., Montreal, Quebec, Canada, • Joseph Milic-Emili, M.D., Montreal, Quebec, Canada • Brian J. Whipp, Ph.D., D. Sc., Torrance, California

Sponsored by the Heart Lung Center of St. Luke's Medical Center, Phoenix • co-sponsored by the Arizona Lung Association and Arizona Thoracic Society

For additional information, contact:
Christine Campbell
Director of Medical Meetings
St. Luke's Medical Center
1800 E. Van Buren, Phoenix, Arizona 85006
(602) 251-8402

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medicine in the Mountains!

THIRD ANNUAL
KU SUMMER MEDICAL SYMPOSIUM
MEDICINE FOR THE PRACTICING PHYSICIAN

August 2-5, 1984

The Broadmoor Hotel and Convention Center
Colorado Springs, Colorado

Selected Topics in

- —Thyroiditis and Hypercalcemia
- —Nephrology
- —Sexually Transmitted Diseases/AIDS
- —Infectious Diseases
- —New Antibiotics
- —Head/Neck Cancer
- —Plastic Surgery

CPC on these and other topics
AMA Category 1 credit

Recreational Opportunities

- —3 Heated Swimming Pools
- —3 18-Hole Championship Golf Courses
- —16 Tennis Courts
- —Well Appointed Skeet & Trap Range
- —Scenery of the Rocky Mountains and Colorado Springs
- —Haute Cuisine

For more information
mail this form to:
Jan Johnston
Office of Continuing Education
University of Kansas Medical Center
39th and Rainbow Boulevard
Kansas City, KS 66103
(Phone: 913-588-4480)

KU Summer Medical Symposium

Name ______________________________ MD DO
Last First Middle circle one

Address ______________________________

City & State ______________________ Zip ________

A

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept, & Nov.
Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Problem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..

Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.

Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.

Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.

Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.

OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.

Surgery
Weekly, Wednesday, 7:00 a.m.

Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.

Psychiatry Staff
1st Wednesday, 11:00 a.m.

Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.

Medicine Cardiology
1st Wednesday, 12 Noon.

Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.

Medicine Mortality
3rd Wednesday, 12 Noon.

Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.

Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.

Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.

Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.

Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..

Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7 :30 a.m.

Anesthesiology Journal Club
4th Thursday, 8:00 a.m.

Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.

Burn Mortality Conference
4th Thursday, 8:00 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.

Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.

OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.

Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12 :30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201. Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ. Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.

Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium.
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium Contact: Leonard Joffe, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon. Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker. M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Medical/Surgical GI Conference
1st & 3rd Monday, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm T5, Contact:
Dr. Byrne, Ext. 426.

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.

Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.

GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

Urology Histopathology Conference
Weekly Tuesdays, 8:00-9:00 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.

Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.

Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.

Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.

Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.

Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact: Dr. Zeller.

Urology Conference
Weekly Friday. 12:00-1:00 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.

Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

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Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

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Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact:
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Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact:
Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact:
Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact:
Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

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2nd Wednesday, 7:00 a.m.

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2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact:
Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact:
Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact:
Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact:
Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact:
Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact:
Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact:
S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact:
Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact:
Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC,
Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact:
Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1:00 p.m., AHSC, Contact:
Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact:
Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact:
Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC, Contact: Dr. J. Goldstone.

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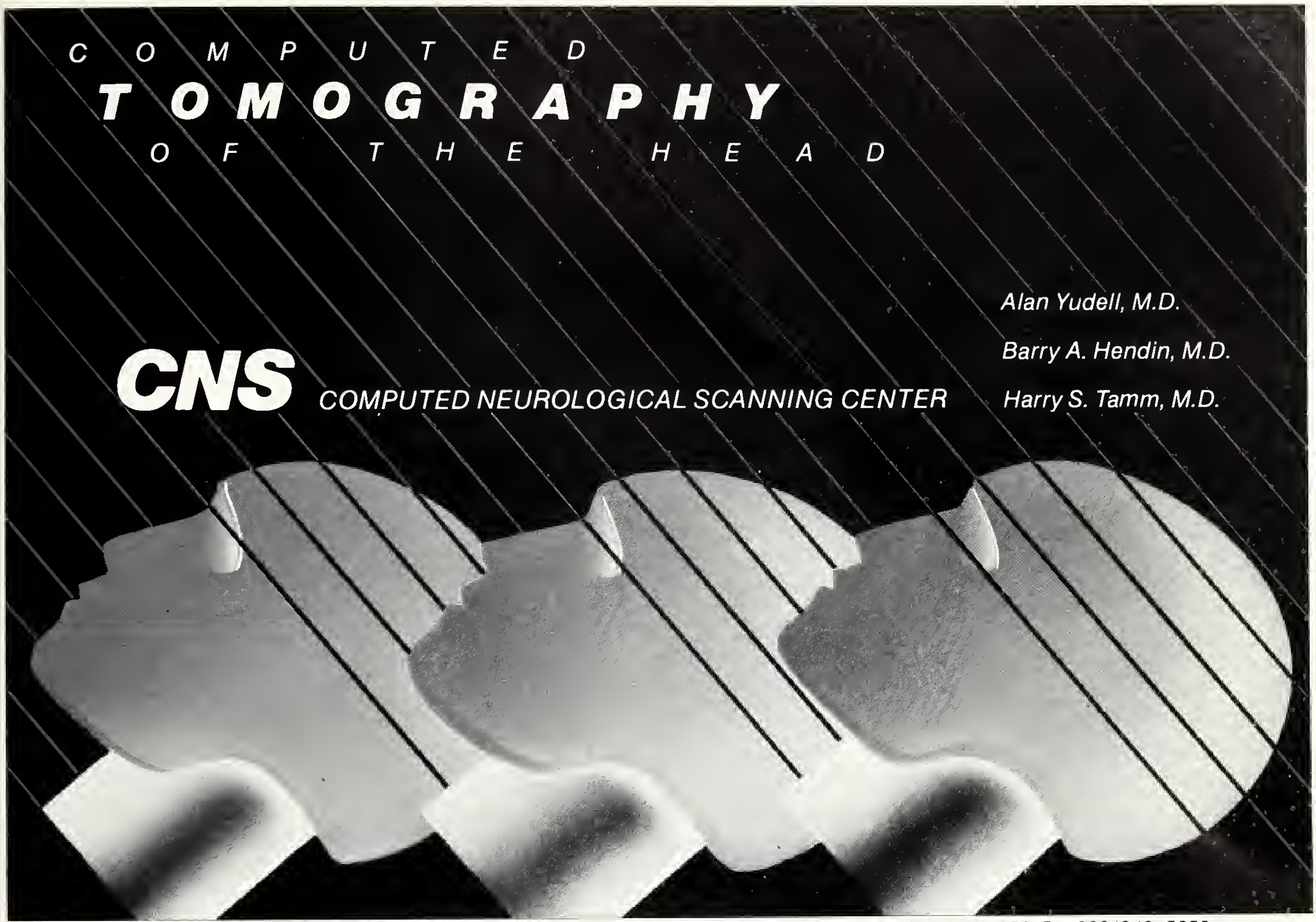

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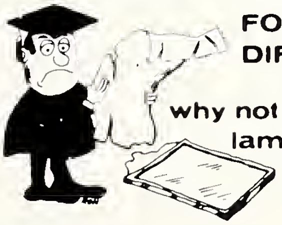

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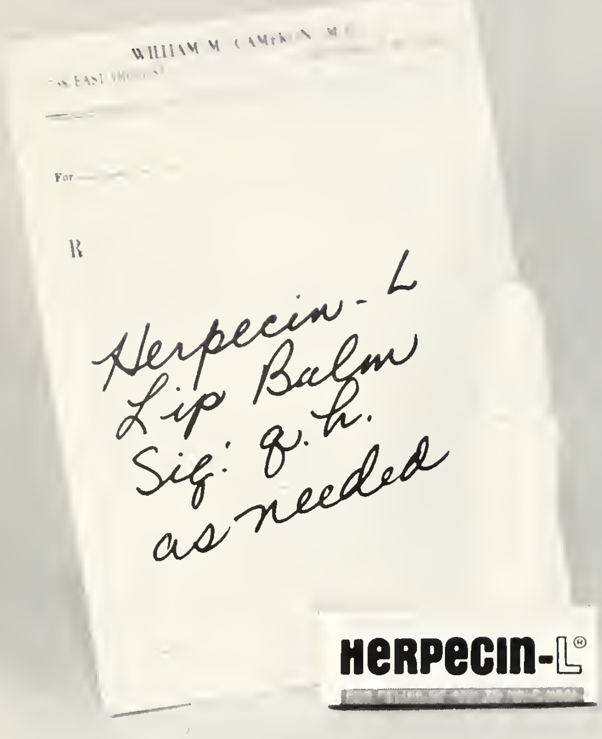

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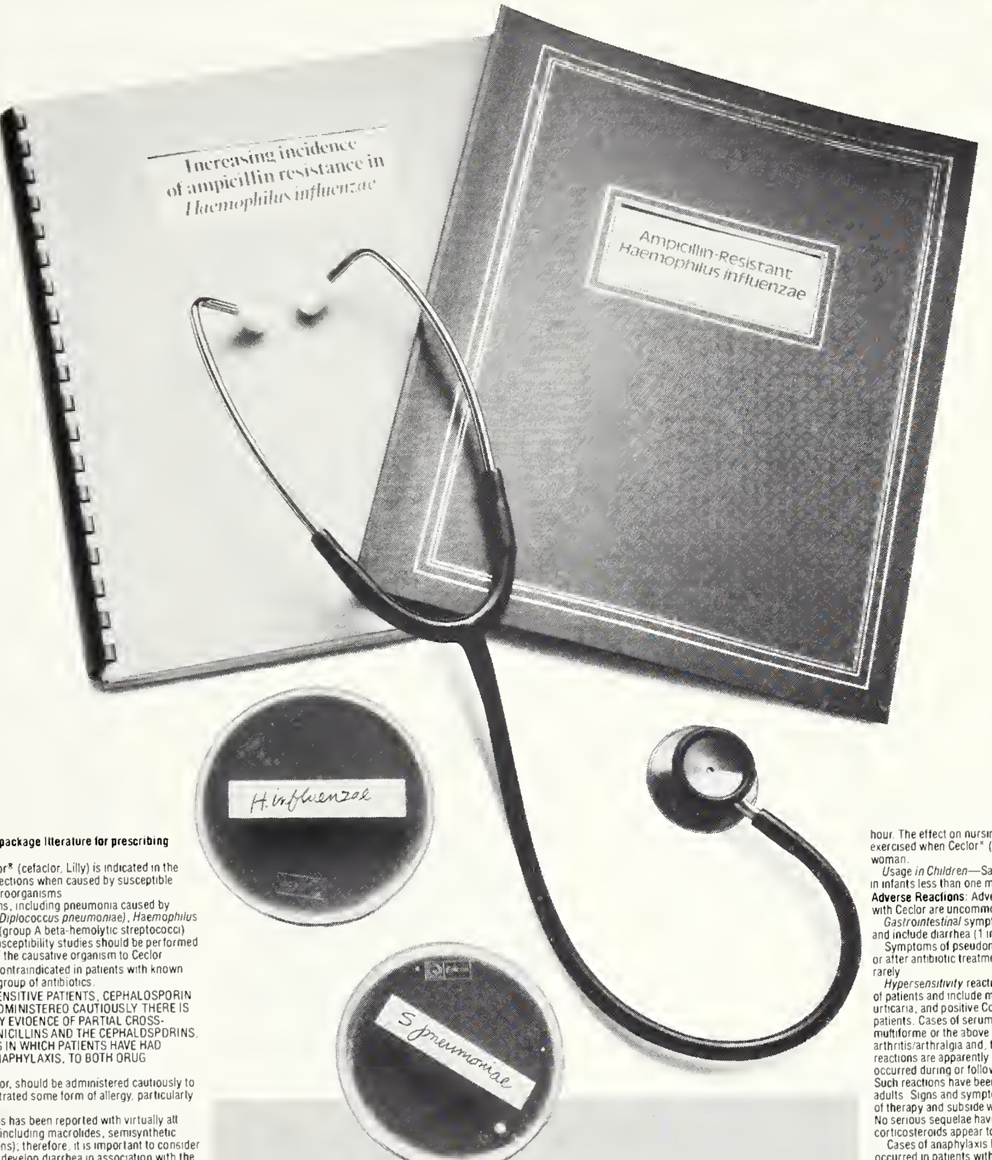
An added complication... in the treatment of bacterial bronchitis*


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

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Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile* Other causes of colitis should be ruled out

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g , pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor There are, however, no adequate and well-controlled studies in pregnant women Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses Average levels were 0 18, 0 20, 0.21, and 0 16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman.

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

Hepatic—Slight elevations of SGDT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200)

[061782R]

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*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S pneumoniae* or *H influenzae*.[8]

Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information

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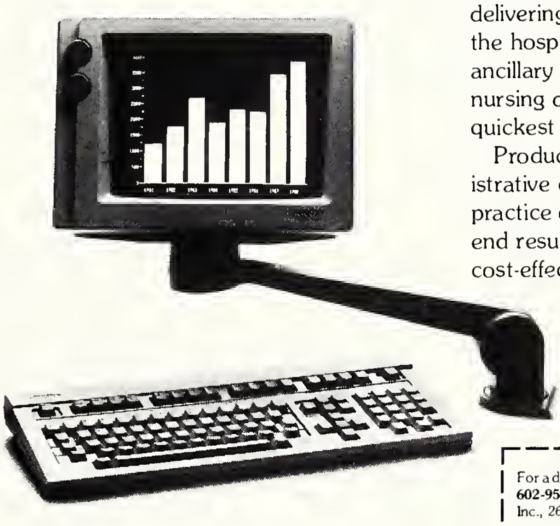

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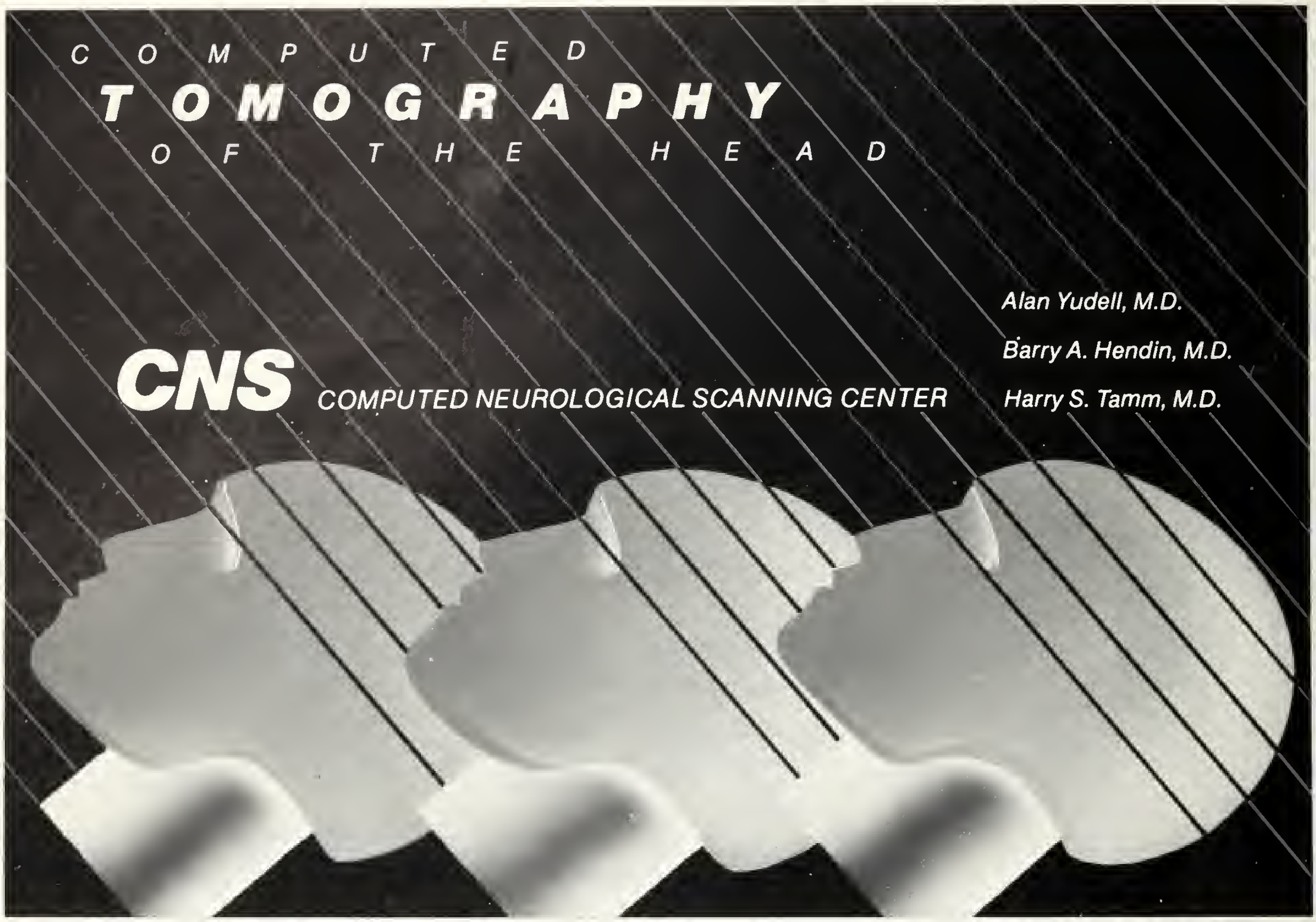

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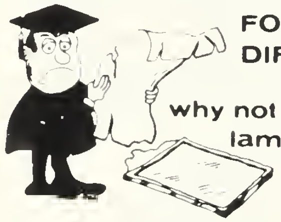

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Allergy

Intranasal Steroid Treatment

Neil O. Ward, M.D.
Dennis W. Berry, M.D.

The "plugged" or blocked nose causes many patients to seek the services of an otolaryngologist. Chronic rhinitis of various etiologies affects an estimated forty million Americans or about 20% of the total U.S. population.[1] Allergic rhinitis, alone, accounts for an estimated $500 million dollars in drug and medical expenses annually.[2] In some patients the diagnosis is obvious, as in the case of huge intranasal polyps. Successful resolution of the polyp patient's problem will require surgical as well as medical treatment. Intranasal steroids should be considered a supplemental or complementary modality of treatment. They are not the first choice of therapy.

In considering the differential diagnosis of nasal obstruction, it is helpful to organize the problem into two categories: Mechanical and Turbinate Dysfunction;[3] mechanical problems are exemplified by hypertrophic adenoids and tumors of the nasopharynx *extranasally*; nasal polyps and foreign bodies *intranasally*; and by septal deviations or septal hematomas related to the *nasal septum*. Mechanical obstruction is usually an indication for a surgical procedure.

Turbinate dysfunction is a component of rhinit medicamentosa, seasonal and perennial nasal allerg vasomotor rhinitis, intranasal infections and endocrin disorders such as the rhinitis of pregnancy. It is th second category of nasal obstruction that best respon to intranasal corticosteroid treatment.

Mast cells are relatively large perivascular an perilymphatic cells found in all organs of the body. The are the main storage depot of tissue histamine. Releas of histamine is triggered by reaction of immunoglobuli E (IgE) and an antigen with the surface receptors of th mast cell.[4] There are several other preformed activ agents and secondary mediators released by th degranulation process of the mast cell. They caus vasopermeability, smooth muscle reactivity, chemotax and other reactions within sensitized mucosa.

Steroids combat the symptoms induced by mast ce degranulation in several ways which are only partiall understood. A local application of corticosteroids: 1 reduces the number of surface basophilic cells; 2 reduces edema and vasodilitation in inflammator mucosa, 3) stabilizes endothelial and epithelial barrier 4) reduces receptor sensitivity for sneeze/irritan stimuli and for cholinergic stimulation of intranasa glands.[5]

Steroids may be prescribed or administered for nasa problems in three ways:

A. Systemic. Oral—The tapered dose packs induc therapeutic levels of steroid in the body for only three t five days. Intramuscular—Repository steroids ma suppress adrenal function for four to seven weeks.

B. Topical Aerosols.

C. Intranasal or Intraturbinal Injection

The last two methods of steroid administration are th safest and most effective in the otorhinolaryngologist' armamentarium.

Decadron Turbinaire is the oldest commerciall prepared topical intranasal aerosol. It is water solubl and dispensed in a fluohydrocarbon propellant. Th dose is two sprays in each nostril T.I.D. Twelve spray produce lmg. per day dosage. The onset of effect i rapid, within hours. However, the duration is brief. Sid effects include systemic absorption with adrena suppression and septal perforations have bee reported.

Two newer corticosteroids have been approved fo intranasal aerosol use — beclomethasone and flunisolide. Flunisolide nasal solution (0.025%) i manufactured by Syntex. Beclomethasone dipropionat is available by prescription as Beconase (Glaxo) an Vancenase (Schering).

From: Neil O. Ward, M.D., 5251 West Campbell Avenue, Phoenix, Arizona 85031

Beclomethasone diproprionate is a powder sus-ension in a Freon propellant. The usual dose is one ray in each nostril four times a day (160 to 320 icrograms per day). The onset of action is slow, quiring four to seven days and the duration of its effect rapidly lost. It is necessary to maintain the dose at hich the patient is free of symptoms for a long period time. Side effects are few and beclomethasone is robably the safest aerosol for pregnant patients. No stemic absorption was demonstrated in studies ilizing 1600 micrograms per day for several months.

Nasalide is available without a propellant. A manual ump is used to generate the aerosol spray. Flunisolide is latively insoluble in water; it is delivered in a ropylene glycol vehicle which accounts for its common de effect — burning and stinging in the nose. The usual ose is two pumps in each nostril B.I.D. for two weeks en tapered off. Twenty-five micrograms are delivered ith each pump. Onset of action is one week or more d the duration is brief. The plasma half-life of unisolide is approximately fifteen hours. Side effects cluding systemic absorption and adrenal suppression o occur from doses greater than seven hundred icrograms per day.

Intranasal injection of corticosteroid is not a new chnique; it was first reported in 1952.[6] Only three eroids preparations are recommended for intranasal jection because of their small particle size pproximately ten microns).[7] Embolization through the thmoid vessels is anatomically possible. Injection of rge particles (up to two hundred microns) has been ssociated with five cases of permanent unilateral lindness.[8] The lateral wall of the nose has rich nastamotic connections, and sinusoids in the erectile ssue of the turbinate provide a point of entry for articles into the internal carotid circulation. Emboli can e forced retrograde from the nose into the retinal irculation via the anterior and posterior ethmoid rteries which are branches of the internal carotid rtery. This is an important anatomic fact and techniques ave been developed to minimize the possibility of lindness as a rare but catastrophic complication of ntraturbinal injection.

More common complications of injecting steroids ntraturbinally are: Bleeding in approximately two ercent of patients. This is related to bleeding from the njection site and is self-limited and minor. Facial ushing occurs in approximately 1.8% twenty-four ours after injection and represents local reaction to teroid as seen with the flare following intra-articular teroid injections. "Needle" reaction is seen in 1.8%; this a vasovagal response treated best with reassurance, mmonia salts if needed and reclining the patient. The ourth most common complication of intraturbinal teroids is back pain and diaphoresis in approximately ne percent of patients. This reaction is also seen with ntramuscular steroids and probably represents a ypersensitivity response to the vehicle in which the teroid is suspended. This reaction subsides without treatment within thirty minutes.

The technique for the intraturbinal injection of steroids has four important points:

1. Topical vasoconstriction and anesthesia.
2. Reassurance and explanation.
3. Slow mucosal injection into the anterior *inferior* turbinate.
4. A dry cotton pledget placed against the injection site to minimize bleeding.

The shrinkage of the anterior inferior turbinate by vasoconstrictor makes it less likely that particles of corticosteroid will be injected intravascularly in the nose.[7] Topical cocaine or a mixture of neosynephrine and pontocaine may be applied intranasally on a cotton tampon for anesthesia and vasoconstriction. A few minutes of explanation will save considerable time if it reassures the patient and avoids the "needle" reaction. Gentle pressure should be used in injecting the anterior inferior turbinate and resistance to the injection should be similar to that experienced with injection of local anesthetics into the cartilaginous portion of the external auditory canal.

The dose of steroid (40 mgs. of triamcinolone) is delivered as 1/2 cc. injected into each anterior inferior turbinate. The onset of effect is within one to two hours and the duration is four to six weeks. Dr. Mabry recommends that a repeat dose not be given before four weeks and no more than four times a year. There has been no demonstrated significant systemic absorption.[9]

Follow-up care to encourage patient compliance with medication prescribed and to rule out permanent turbinate hyperplasia associated with some cases of vasomotor rhinitis is important. The patient should be instructed to stop smoking and discouraged in the use of over-the-counter nosedrops. A discussion should educate the patient to avoid allergens, to indications for allergic hyposensitization and for appropriate surgery in the case of polyps or hyperplastic turbinates. Antihistamines or antihistamine-decongestant combinations should be prescribed for there is clinical evidence to suggest that intranasal steroids potentiate the effect of antihistamines.

No pregnant patient should be treated for rhinitis medicamentosa without the concurrence of her obstetrician. Enough problems exist for the obstetrician without his colleagues making his life more difficult. Even the 1983 PDR (Physicians Desk Reference) carries the warning that one of our most widely used antihistamines, in Dimetapp and Dimetane, is contraindicated in pregnancy.[10]

Indications for intranasal steroids and the conditions most likely to respond are: nasal allergy, rhinitis medicamentosa and rhinitis of pregnancy.

Nasal allergy therapy results are best when coupled with the avoidance of allergens, antihistamine therapy, hyposensitization and/or nasal polypectomy if indicated. Intranasal beclomethasone in recommended doses was reported to be ineffective in the management of nasal polyps associated with chronic, severely symptomatic rhinosinusitis.[11] This underlines the importance of surgical correction of mechanical obstruction of the nose.

Rhinitis medicamentosa responds well to the injection of steroid in the inferior turbinate because the method seems to work faster and also gets the patient off nose drops faster. Retrospective interviews indicate that intranasal injection was more effective and produced longer relief from nasal obstruction caused by allergy or vasomotor rhinitis than did intramuscular steroids.[8]

The rhinitis of pregnancy responds well to intranasal steroids if the treatment is cleared by the obstetrician. Treatment should be given only in the second and third trimesters. Up to thirty percent of pregnant women may experience rhinitis and the effectiveness of steroid intranasally has been well documented.[12-16]

Vasomotor rhinitis is less predictable in its response to intranasal steroids. If permanent hyperplasia of the turbinate has occurred, surgical resection may be necessary to restore nasal breathing.

In summary, the intranasal injection of steroids is safe with careful technique, convenient for the patient and effective if the physician is carefully selective in his choice of patients. Exactly how corticosteroids work at the cellular level remains an unsolved mystery and the long-term effects are unknown, but clinical experience indicates that carefully selected patients, treated by intranasally injected steroids, can be helped to overcome their nasal obstruction without evidence of adrenal suppression.

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Dermatology

Granular Cell Myoblastoma

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Editors:
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Granular cell myoblastoma is a very uncommon tum whose cell of origin remains unclear, which has be known to affect the skin, subcutaneous wall, ar tongue, as well as multiple internal sites.[1] The mo common site of origin for this tumor is within the sk followed by the oral tissues, particularly the tongu Multiple granular cell tumors of the skin are extreme rare and the most recent review of the literature[1,2] foun approximately forty-seven cases of multiple granul cell myoblastoma of the skin. The following describes recently discovered case with multiple cutaneou granular cell tumors.

The patient was a 13-year-old white female who was i otherwise excellent health and who presented to th Dermatology Clinic complaining of painful derm nodules and tumors that were multiple. The first lesio appeared at one year of age on her right ring finge knuckle followed by a second lesion on the bilater upper thighs. On her most recent presentation she had total of twelve lesions, ranging in size from the smalle of 3 mm. to the largest approximately 1 cm. in diamete Clinically, the lesions (Figure 1) were skin colore dermal papules-nodules, some with poorly define margins, others were sharply defined. Two of th lesions, one of the right upper shoulder area and one o the right knuckle, had been described as being ver sensitive to being bumped, causing an excruciatin sharp pain which in one instance lasted for several day A biopsy was taken of the most prominent and typic lesion on the left abdomen. The histology showed a unremarkable epidermis and within the mid-dermis extending down into the deeper reticular dermis, wer very distinctive tumor cells composed of a very finel granular plump cyotoplasm diagnostic of granular cel myoblastoma. Multiple biopsies were not performed.

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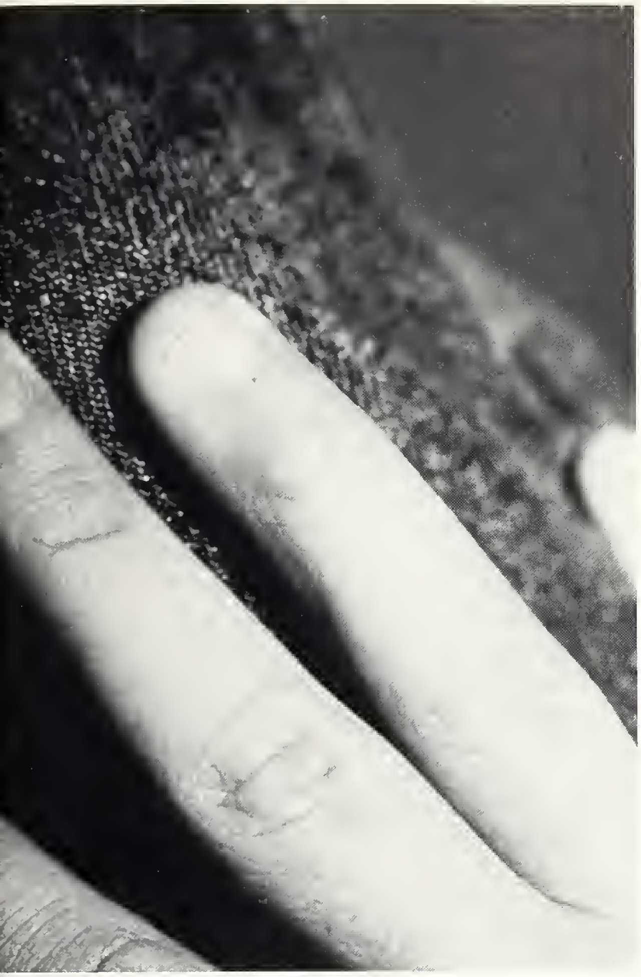

Figure

mment

'his young patient illustrates some very common
ints regarding granular cell myoblastoma. Because it
ıncommon and particularly rare with multiple lesions,
: clinical diagnosis is usually missed.[1] An excellent
:ent review of the subject by Apisarnthanarax[1] is
ggested for further reading. In this patient, several
ssibilities were suspected. With a history of painful
rmal nodules, one would have to consider eccrine
roadenoma, neuroma, leiomyoma, glomus tumor,
d angiolipoma. Granular cell myoblastoma has been
scribed as being painful,[1] although one does not
rmally consider this diagnosis when confronted with
inful dermal nodules, but perhaps should be included
the differential. Other possibilities were also included
the clinical differential diagnosis such as a fibrous
sue tumor, dermatofibromas, fibroushystiocytoma, as
ell as more common diseases such as granuloma
nulare. The disease has been reported in all age
oups, and shows a predilection for females and Blacks.
e clinical features are nondistinctive; however, the
story is fairly typical,[3] showing in some cases a pseudo-
itheliomatous hyperplasia of epidermis, which our
tient did not show, with nonencapsulated cells which
ve a very faint eosinophilic granular cytoplasm.
ually this histological picture is distinctive enough that further studies with special or electromicroscopy are unnecessary. The histogenesis of the granular cell is not completely clear and multiple theories have been proposed, although the most popular theories today seem to suggest that it is either an undifferentiated mesenchymal cell or is of neural origin, possibly Schwann's cell origin.[1] Malignant transformation of the granular cell tumor is again very rare and apparently has never occurred in multiple tumors.[1] These often are suspected by the size of the tumor with malignant tumors being considerably larger than the benign, with a history of very rapid growth and involvement of nearby structures, is more helpful than perhaps the histopathology alone. Treatment of granular cell tumors is primarily by excision. This patient elected not to have any removed but future selective removal of symptomatic lesions was suggested.

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AM *Gastroenterology*

Nutritional Therapy for Patients with Liver Disease

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Controversy surrounds the nutritional management of patients with liver disease. While the importance of nutritional support is unquestioned, the best means of providing adequate calories and protein and the form in which they are administered to the patient continues to be the subject of intense discussion and research. Injury to the liver caused by alcohol, viruses, drugs or metabolic abnormalities such as excessive iron or copper storage may ultimately lead to cirrhosis and the complications of hepatic failure and encephalopathy. The resultant liver damage whether acute, such as viral or alcohol hepatitis or endstage as postnecrotic cirrhosis with encephalopathy, requires treatment directed at providing adequate calories, protein, fat and water soluble vitamins and other micronutrients.

This presentation will briefly review the effects of acute and chronic liver damage causing nutritional deficits which must be met. Further, the current treatment of hepatic encephalopathy and TPN induced liver dysfunction will be highlighted.

Treatment of Liver Disease of the Alcoholic

Alcoholism is the most common cause of liver disease and cirrhosis in the United States. It can also lead to malnutrition with or without the development of liver disease. The incidence of malnutrition in alcoholics is unknown. In a series of middle class alcoholic patients 12% weighed less than their ideal body weight.[1] In a study assessing patients with adequate financial resources, the mean dietary intake was 2,500 calories per day and no evidence of malnutrition detected.[2] But in derelict alcoholics, protein malnutrition and vitamin deficiencies are frequently found. Dietary histories of 56 alcoholic patients showed that 70% consumed less than one meal daily for the ten-day period preceding hospitalization. Protein calories were less than 6% ar ethanol calories about 50% of the daily caloric intake 304 alcoholics admitted to the Boston Vetera Administration Hospital.[3] Deficiencies of water solub vitamins are often found in alcoholics while fat solub vitamins are usually normal. Leevy obtained a history substandard diets in 64% of 172 patients with chron alcoholism. Circulating levels of two or more wat soluble vitamins were significantly reduced in 32% patients with *normal* livers, 44% of those with fatty live and 49% of those with cirrhosis. Folate was the mo common deficiency with decreased levels found in 47 of all cirrhotics.[4]

The caloric content of 550 cc of 86 proof liquor is 1,4 or 7.1 kilo-calories per gram of alcohol. Ethanol suppli less energy than carbohydrate metabolism and when it substituted for carbohydrates, there is a significa weight loss. The major pathway of ethanol oxidation alcohol dehydrogenase and is directly linked to t production of NADH and ATP. When excess alcohol consumed the alcohol dehydrogenase system saturated and the microsomal oxidation of ethanol increased. This system is an energy-consuming syste and requires NADPH oxidation resulting in no hi energy phosphate bond synthesis. In addition inadequate dietary intake, ethanol alters absorptio storage activation and catabolism of many importa nutrients.[5]

Alcohol is directly toxic to the gastrointestinal tra and decreases absorption of thiamin, xylose, folate ar fat. Lactase actively is decreased and depression of E absorption occurs. Steatorrhea occurs in 50% of ci rhotics and causes include decreased intraluminal bi salt concentration and pancreatic insufficiency.[6]

Reduced hepatic storage of folate, thiamin, riboflavi nicotinamide, B_{12} and vitamin A has been found cirrhosis.[7]

In the past, alcoholic cirrhosis has been thought to secondary to nutritional deficiency, however, there now compelling evidence which indicates that ethan is a direct hepatotoxin in man. Lieber has shown th when subjects on an adequate diet were fed alcoho fatty liver and hepatitis developed.[8] Nutritional thera of the alcoholic must be focused on treatment of calor and vitamin deficiencies and treatment must individualized to meet specific established deficiencie The amount of protein given should maximize nitroge balance but not precipitate hepatic encephalopathy. gradual increase of 60 to 70 g/day in 70-kg man w depend on signs of encephalopathy. Water solub vitamins should be given daily. Vitamin A deficiency alcoholics may be associated with night blindness ar respond to vitamin A therapy, however, concomita zinc deficiency may contribute and visual abnormaliti may respond to zinc therapy. Vitamin D and K deficien may occur and require replacement. Disorders of wat and electrolyte metabolism are frequent as seen i ascites, edema and diuretic use. Replacing potassium extremely important to avoid muscle wasting an

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epatic encephalopathy. Iron deficiency is uncommon alcoholics unless gastrointestinal bleeding or fection is present. Routine replacement of copper, nc or trace metals is not suggested.

epatic Complications of TPN

Total parenteral nutrition-induced liver dysfunction ontinues to be a frequent complication in both the eonate and adult receiving this form of nutritional erapy. Fatty liver, cholestasis, hepatocellular necrosis, brosis and cirrhosis have all been reported complicating TPN. In neonates receiving TPN, liver dysfunction ay be severe leading to hepatic failure and death. Fatty ver, cholestasis and fibrosis occurred in over 70% of fants receiving TPN for various periods of time.[10] The tiology of TPN-induced liver dysfunction in the eonate is unclear but several factors may be operative. hese include: excessive carbohydrate Kcals, amino acid mbalance, concurrent sepsis and taurine deficiency. he only treatment available is discontinuation of the arenteral solution. Since liver disease is a severe omplication, frequent monitoring of liver function ests and bilirubin is suggested.

In the adult, liver dysfunction induced by TPN is less erious and is reversible. Characterized by gradual levations of alkaline phosphatase, SGOT and bilirubin, iopsies demonstrate fatty infiltration or cholestasis with r without fibrosis.[11] The etiologies suggested include xcessive glucose administration, and essential fatty acid eficiency (EFAD) and sepsis. Treatment is directed at educing the calorie:protein ratio to less than 200/L. If e solution has been fat free, administration of ntravenous fat emulsions will correct the essential fatty cid deficiency. Two 500 ml infusions of 10% lipid have eversed the biochemical signs of EFAD. Cyclic TPN very eight hours may also be attempted. This will horten the infusion time for glucose and allow an 8-our dextrose free period. Insulin levels will decrease llowing lipolysis to resume. It is necessary to frequently onitor liver function studies. Avoid TPN if enteral eeding is feasible and avoid high dosages of fat dministration since this may also be associated with ver dysfunction.[12,13]

epatic Encephalopathy and Branched-Chain Amino cids (BCAA)

While the etiology of portal systemec encephalopathy PSE) is unknown, abnormalities in the CNS associated ith deranged levels of ammonia and neurotransmitters ppeared to play an important role. The person with PSE as mental, personality, and neuromuscular alterations imilar to those of cirrhotics who ingest ammonia-enerating substances such as protein, amino acids and rea. Elimination of those substances by a diet low in rotein combined with neomycin and/or lactulose everses the psychiatric manifestations. Milk proteins ay generate less ammonia than do blood proteins and re tolerated better by cirrhotics with portal-systemic hunting.[14] Treatment of patients with PSE with vege-able protein diet rather than overall protein restriction resulted in more positive nitrogen balance.[15] In addition to ammonia as a toxin in PSE, mercaptans, short-chain fatty acids, and abnormal combinations of amino acids have been suggested as possible contributors. Fisher and Baldessarini attribute PSE to an excess concentration of aromatic amino acids within the brain and resultant formation of false neuro-transmitters.[16] In patients with cirrhosis, an abnormal plasma amino acid profile is present with increased plasma levels of aromatic amino acids-phenylalanine, tyrosine and tryptophan and decreased branched-chain amino acids (BCAA)-valine, isoleucine and leucine.[17] Uncontrolled studies have attempted to normalize plasma amino acids by infusing solutions rich in BCAA and low in aromatic amino acids and report improvement in psychiatric status in PSE.[18] In a controlled multicenter clinical study, 53% of patients receiving branched-chain amino acid infusion with acute exacerbation of PSE reversed completely to normal mental status.[19] Marchesini infused BCAA enriched solution into cirrhotics without PSE and produced normalization of muscle protein catabolism.[17] Currently nutritional management of encephalopathy suggests the trial of solutions in which branched-chain amino acid constitute 37%, 42% or 50% of total amino acids. Fisher has shown that this infusion: 1) promotes protein synthesis in muscle, 2) enhances the uptake of amino acids by muscle, 3) prevents reflux of aromatic amino acids by muscle, 4) reduced intracerebral aromatic amino acid levels by competing directly for transport across the blood-brain barrier, and 5) increases hepatic protein synthesis.[20] Questions concerning the benefits of BCAA exist and much research continues in this area. In patients with liver disease a well-balanced high protein diet is essential, at least 70 g per day should be given. With PSE the amount of protein must be decreased and titrated in amount. Concomitant use of lactulose to avoid worsening of the PSE is helpful. Branched-chain amino acid solution, while expensive, gives promise of extra vitally needed protein building blocks and may be added. Nutritional intervention in patients with liver disease is critical and at times life-saving. Increased physician awareness of dietary manipulation in patients with liver disease will aid in these difficult clinical management problems.

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Nutrition

Copper Biochemistry and Nutrition in the Aged Adult

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Copper is important as an integral component of metalloenzymes which catalyze a variety of biochemical reactions. Important cuproenzymes include cytochrome oxidase, superoxide dismutase, uricase, dopamine-B-hydroxylase, lysyl oxidase, ceruloplasmin, and tyrosinase.[1]

Ingested copper is absorbed from the gastrointestinal tract in the range of 40% to 60% for adults.[2] Copper absorption in the elderly may be similar to younger adults. However, factors affecting copper absorption

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hich could differ include the amount ingested and the hemical form, or bioavailability. In addition certain ietary constituents including zinc and cadmium, ulphate, ascorbic acid, fiber and phytates may influence bsorption. Absorbed copper is transported by albumin o the liver where it is stored as cuproproteins. The redominant copper form released from the liver is eruloplasmin. Ceruloplasmin is an important copper xidase enzyme. Plasma levels of ceruloplasmin and otal copper generally change proportionately. Thus, onditions affecting serum protein levels such as severe nalnutrition or plasma loss may affect the levels of trace lements like copper.

The homeostatic regulation of copper metabolism is pparently complex. Intestinal absorption mechanisms ppear to play a role. Serum copper levels are somewhat igher in women than in men and this difference is reatly increased for women taking estrogenic ontraceptives.[3] Serum copper levels during pregnancy re routinely up by two to three times. Estrogens ncrease serum copper levels by increasing hepatic eruloplasmin synthesis. Administration of progesterone and testosterone increase serum copper levels, while administration of corticosteroids decrease serum opper. Hence, patients with hormone related diseases uch as thyroidism, hypopituitarism, Addison's and Cushing's disease are likely to show abnormal serum opper levels. Hormonal effects on copper metabolism re a mechanism for the increase in serum copper levels with age. For example, there is a linear increase in serum opper with age, with mean serum levels of 124 ug/dl at ge 24 years and 145 ug/dl at 60 years of age.[4]

Requirements and Dietary Intake

The Recommended Daily Allowance for copper has ot been established due to a lack of data. However, the 'estimated adequate and safe" copper intake for adults s 2.0 to 3.0 mg/day.[5] Recommendations for copper ntake specifically for the elderly population with higher erum levels have not been proposed. While metabolic balance studies help define copper needs they cannot be relied on exclusively for defining copper requirements. Copper retention is decreased by a high zinc ntake (23 mg/day), consistent with the zinc-copper antagonism. This should be a significant concern when high zinc intake occurs.

Western diets generally supply two to four mg/day, however, studies of several U.S. groups have revealed ntakes between 0.2 to 1.8 mg/day. Estimates of regular, vegetarian and renal diets of a U.S. hospital are 0.90, 1.10, and 0.51 mg/day, respectively.[1] A high percentage of U.S. diets provide much less than 2 mg/day, the estimated low-adequate intake for adults.[1]

Copper and Diseases of Aging

Human copper deficiency has been documented in infants and children, but not in the elderly per se, excepting isolated cases such as nephrosis, intestinal disease and during total parenteral nutrition. Evidence does not implicate copper deficiency in the deterioration of physiological functions which occur with aging. A number of conditions or diseases associated with aging have been shown to include disturbances in copper metabolism. These include neoplasms, and cardiovascular and rheumatic disease. Ceruloplasmin has been classified as an acute phase protein and its increased hepatic synthesis is generally believed to underlie the hypercupremia seen in hormonal, infectious and inflammatory body disturbances. Copper plays important roles in normal functioning of lymphocytes in various host defense systems.[6]

Hypercupremia is commonly seen in cases of leukemias, Hodgkin's Disease, malignant tumors and myelomas.[1] This may be due to the generalized response of increased serum copper to inflammatory body stress. Some studies indicate that arthritis or rheumatism sufferers may have increased levels of copper in serum. The usefulness of copper-containing drug treatments is unclear and more research is needed before copper's association with arthritis can be ascribed to anything more than a generalized inflammatory response.

Copper has been implicated in a variety of cardiovascular diseases. In animals, copper deficiency has been cited as causing vascular defects such as aneurisms and large vessel ruptures (due to impaired lysyl oxidase cross-linking of collagen and elastin), and neural and cardiac abnormalities.[1] Hypercholesterolemia due to copper deficiency has been observed in humans and a variety of animal species. Klevay suggests that a metabolic imbalance of zinc and copper is a major factor in the etiology of ischemic heart disease.[7] The metabolic imbalance is either a relative or absolute deficiency of copper, hence, conditions of excess zinc and/or copper deficiency are suggested to be atherogenic. Results from other studies, however, are not always consistent with this hypothesis.[1]

Clearly copper is needed fairly regularly in the diet of the elderly. While prolonged deficiency will produce clinical symptoms, a mild reduction has not yet been shown to be significant. High intakes of other nutrients such as zinc may produce a copper deficiency by competition for absorption.

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Oncology

Mitoxantrone:
A Promising New Chemotherapeutic Agent

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Introduction

Mitoxantrone, or 1,4-dihydroxy 5,8-bis(2-((2-hydroxyethyl)amino)ethyl)amino 9,10 anthracenedione dihydrochloride, is a new anthracenedione derivative which has now entered phase II and III clinical trials.[1] Because mitoxantrone shares certain structural similarities with the anthracycline, doxorubicin hydrochloride (Adriamycin®), these two drugs have been compared often with respect to antitumor activity and clinical toxicity. The major dose-limiting toxicity of doxorubicin is cardiac toxicity and it was hoped that mitoxantrone did not share this side effect. Although doxorubicin is known to be a DNA intercalator, mitoxantrone does not intercalate into the DNA molecule at cytotoxic concentrations.[2] Mitoxantrone has proven comparable to or superior to doxorubicin in all animal tumor models tested; however, in a rat cardiotoxicity model, mitoxantrone is much less cardiotoxic.[3,4] Because of this apparent lack of cardiotoxicity and wide spectrum of antitumor activity found in animal tumor models, mitoxantrone has now been entered into clinical trials.

Phase I Studies

Various doses and dosing schedules have been investigated in numerous phase I clinical investigations of mitoxantrone. Von Hoff et al.[5] have determined that mitoxantrone can be given safely to patients who have received prior chemotherapy when given as a single 12 mg/m^2 IV dose every 21 to 28 days. In a similar study performed at the Royal Marsden Hospital in London mitoxantrone was given at a starting dose of 14 mg/m^2 on an every-3-week dosing schedule to patients who had received no prior chemotherapy.[6] In a study conducted at the University of Arizona by Alberts et al. mitoxantrone was administered once weekly for two to six weekly doses to nine patients with cancer who had been previously treated with chemotherapy. It was concluded that patients with previous treatment with good performance status could tolerate 5 mg/m^2 given on a weekly dosing schedule for three to four weeks before developing toxicity. The major dose-limiting toxicity was manifested as leukopenia (WBC $<3{,}000/mm^3$), which in all cases was reversible. Thrombocytopenia was less of a problem, occurring only at higher doses. Anemia has not been observed in any of the phase I clinical trials.

Nonmyelosuppressive toxicity appears to be minor and well tolerated by patients. Nausea and/or vomiting is the most commonly reported adverse effect with approximately 30% of patients experiencing these symptoms.[8] Unlike doxorubicin, mitoxantrone causes only a mild degree of hair loss occurring in approximately 5% of patients.[8] Drug extravasation with tissue necrosis is also a well-known toxic effect of doxorubicin; however, this has not been observed with mitoxantrone.

Patients with drug-refractory acute leukemia have received considerably higher doses of mitoxantrone ranging from 8-20 mg/m^2 daily for five consecutive days.[9] The major dose-limiting toxic effects in these studies were stomatitis, mild nausea and vomiting, and in a few patients, minor elevations in hepatic enzymes. No cardiac, pulmonary, or renal toxicities have been observed at these higher doses.

Phase I studies are designed to determine the acute dose-limiting toxicity of a drug and, thus, are relatively insensitive for the detection of chronic toxicities. Phase II studies are currently being conducted wherein mitoxantrone is being administered over a prolonged treatment period. In a study by Smith et al.[10] investigating the efficacy of mitoxantrone in the treatment of breast cancer, two patients developed reversible cardiac failure after prolonged treatment. One patient developed symptoms at a total dose of 240 mg/m^2 and the second developed symptoms after 175 mg/m^2. Neither patient had received doxorubicin prior to the mitoxantrone therapy. Other studies have reported cardiac dysfunction in patients receiving mitoxantrone after having received prior doxorubicin.[11] It is on the basis of these findings that mitoxantrone should be used with great caution, particularly if the patient has received a total dose of doxorubicin of more than 350 mg/m^2. Randomized comparative clinical trials to

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valuate cardiac function by means of serial radinuclide scans and endomyocardial biopsies are urrently ongoing and will best assess the problem of itoxantrone-induced cardiotoxicity.

harmacokinetics

In order to study the pharmacologic disposition of itoxantrone and its relationship to clinical toxicity and ntitumor activity, sensitive analytical methods have een developed to measure the parent compound and s metabolites. Alberts et al.[12] at the University of rizona have studied the disposition of mitoxantrone in atients using both C^{14}-labelled mitoxantrone and high erformance liquid chromatography (HPLC). In these tudies, it has been determined that mitoxantrone is liminated slowly from the body with a terminal-phase lasma half-life of approximately 40 hours. The drug ppears to be extensively metabolized by the liver and ecal elimination appears to be the major route of nitoxantrone excretion. Because of the extensive netabolism of mitoxantrone, it is important to determine if hepatic dysfunction affects the physiologic lisposition and toxicity of the drug. Studies conducted y Savaraj et al.[13] have shown that patients with hepatic lysfunction or an abnormal fluid third space have a lecreased total body clearance of mitoxantrone. dditionally, Wynert et al.[14] have reported that patients vith extensive liver disease have a more profound nyelosuppression secondary to standard doses of nitoxantrone. Preliminary studies, therefore, indicate hat mitoxantrone, like doxorubicin, may require dose eduction in the presence of liver disease. This may also nold true for patients with an abnormal fluid third space, uch as ascites or massive lymphedema.

hase II Studies

Numerous phase II studies are being conducted to nvestigate the activity of mitoxantrone in various solid and hematologic malignancies. Mitoxantrone appears o be most promising in the treatment of advanced breast cancer, lymphoma, and acute leukemia. Using an n vitro human tumor cloning assay, Von Hoff et al.[15] screened the antitumor effects of mitoxantrone. Mitoxantrone exhibited excellent in vitro antitumor activity against adenocarcinoma of the lung, small cell lung cancer, melanoma, and biliary cancer. In addition, good activity was noted against breast cancer, ovarian cancer, non-Hodgkin's lymphoma, head and neck cancer, squamous cell lung cancer, gastric cancer, soft tissue sarcoma, and hepatomas. As the results of phase II clinical trials become available, a comparison of these in vitro results will allow an evaluation of the utility of the human tumor cloning system for predicting the clinical antitumor activity of this new compound.

Numerous clinical investigations on the effects of mitoxantrone alone and in combination with other drugs have been carried out in the treatment of breast cancer. In a study by Smith et al.[10] conducted at the Royal Marsden Hospital in London, 14 of 39 patients (36%) who had received no prior chemotherapy for metastatic disease achieved an objective response when treated with mitoxantrone as a single agent. In patients who had received prior conventional chemotherapy, five of 23 patients (22%) achieved an objective tumor response. The drug was very well tolerated by these patients with the dose-limiting toxicity being myelosuppression.

In a randomized cross-over trial comparing mitoxantrone to doxorubicin in advanced breast cancer there appeared to be no significant difference in antitumor activity between the two agents.[11] In addition, there seemed to be no cross-resistance between the two agents (i.e., failure with one drug did not predict success or failure with the other drug). Nonhematologic toxicity was more frequent and severe with doxorubicin than with mitoxantrone. In general there was much less nausea and vomiting, fatigue, and alopecia when patients received mitoxantrone.

In a similar study investigating mitoxantrone as a first-line cytotoxic agent in advanced breast cancer, mitoxantrone proved very similar to doxorubicin in efficacy.[16] Both drugs produced a response rate of approximately 40% in these patients when used as first line chemotherapy.

Only preliminary results are available from studies investigating the efficacy of mitoxantrone in malignant lymphoma.[17] However, these preliminary data do indicate considerable activity in all histologic categories of non-Hodgkin's lymphoma. Mitoxantrone appears to be most efficacious when administered at a dose of 14 mg/m^2 on an every-three-week basis. Once again, reported side effects are minimal with mild nausea and vomiting being the major side effects.

Studies investigating mitoxantrone in refractory acute leukemia have been very encouraging. A group of investigators at Mt. Sinai Hospital in New York administered 8 to 20 mg/m^2 doses of mitoxantrone daily for five consecutive days to 26 patients with refractory acute leukemia.[9] Oral mucositis was the dose-limiting toxic side effect, with nausea and vomiting being sporadic and mild. In this study, six instances of complete marrow remission were observed in 12 patients with acute lymphocytic leukemia. Of these patients, four had previously been treated with anthracycline regimens and had not achieved a complete remission. These data imply a lack of cross-resistance between mitoxantrone and the anthracycline antibiotics doxorubicin and daunorubicin. Of 12 patients with acute myelocytic leukemia, one patient achieved a complete remission and another a partial remission. Although mitoxantrone appears to be less active in acute myelocytic leukemia, in vitro studies demonstrate a synergism between mitoxantrone and cytosine arabinoside, which may prove clinically useful. Phase II clinical studies are currently being conducted to investigate this possibility.

Summary

Mitoxantrone is a new anthracenedione derivative which has proven activity in a wide variety of tumors including breast cancer, lymphoma, and acute lymphocytic and acute nonlymphocytic leukemias. As first-line therapy, mitoxantrone appears to be just as efficacious as doxorubicin in the treatment of breast cancer, producing a response rate of approximately 40%. Although mitoxantrone and doxorubicin have been compared because of certain structural similarities, the overall toxicity observed with mitoxantrone appears to be much less. Myelosuppression is the major dose-limiting toxic effect and nonmyelosuppressive toxicity appears to be minor and well tolerated by patients. Nausea and/or vomiting is the most commonly reported side effect. Unlike doxorubicin, mitoxantrone produces minimal hair loss and alopecia requiring a wig is exceedingly uncommon. Because of the reduced toxicity of mitoxantrone, patients may be more compliant and willing to undergo chemotherapy with this active new agent.

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Pediatrics

Acne Vulgaris in Adolescence

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Acne is the most common adolescent skin disorder. Eighty-five percent of adolescent patients have acne lesions. The degree of acne ranges from a few comedones and papules to marked nodular cystic disease of the face and trunk. Our goals in the treatment of acne are to limit physical and psychological scarring. In this review article, we will explore etiology pathogenesis of characteristic lesions and therapeutic goals.[1]

Key Words: Acne Vulgaris, Adolescence, Comedones, Papules, Pustules, Nodules and Cysts.

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tiology and Pathogenesis

Comedones are the earliest acne lesions, which result om the failure to normally slough the horny epidermal ells that line the follicular canal. This procedure is alled follicular retention hyperkeratosis.[2] Dilation of ne orifice of a sebaceous follicle above a comedo will esult in the extrusion of this mass at the surface of the kin. This is an open comedo (blackhead). If the pore bove a comedo fails to dilate, then a closed comedo vhitehead) occurs. The formation of a closed comedo nay be followed by the formation of inflammatory esions. Papules, pustules, nodules, and cysts result from ne action of propionibactrium acnes on an impacted ollicular sebaceous Unit[3] P. acne produce lipases that ct in the conversion of lipid to free fatty acids. Free fatty cids are inflammatory to the follicular wall. The result of nis inflammatory response is a pustule if superficial or a apule, nodule, or cyst if the inflammatory debris is nore deeply located.[3]

reatment

The treatment of acne requires agents that are ffective against comedones, papules, pustules, nod-les, or cysts. The therapy is individualized depending n the nature of the lesions.[4]

Comedolytics are used to prevent and remove visible lackheads and whiteheads. Exfoliants evoke a mild eeling that patients sense as a dryness of the skin.[3]

Benzoyl peroxide functions as an antibacterial, xfoliant and comedolytic. Its chief benefit is antiacterial.[4] Ten percent benzoyl peroxide essentially educes. P. acnes by 100% and frees fatty acids by 50 ercent within four weeks of application. Benzoyl eroxide is available in 2.5 percent, five percent and ten ercent. Gels are the most effective vehicle. Benzoyl eroxide is best initiated on an every other day regimen or the first two weeks of therapy.[5] Patients, initially requently complain of redness and scaling. Patients vith severe pustular acne may require oral tetracycline long with benzoyl peroxide to control the severe nflammatory component of the acne. Benzoyl peroxide nay cause allergic eczematous contact dermatitis.

Topical retinoic acid is effective treatment for open nd closed comedones of acne.[6] It acts by increasing cell urnover and by decreasing the cohesiveness of pithelial cells within the sebaceous follicular unit. Retin A is available in gels, creams and liquids. Alternate day herapy initially will decrease redness and peeling.[7] The major problems with Retin A are marked dryness and peeling. Retinoic acid and sunlight may cause photorritation. Sunscreens may be utilized to prevent this occurrence. Retin A is most effective in pure comedonal cne.

Systemic antibiotics are commonly used in the reatment of acne. They are most effective in the reatment of pustular, papular, and nodular acne. Tetracycline's effectiveness is in its ability to inhibit growth of P. acnes. Patients with inflammatory acne are started on one gram of tetracycline per day. One attempts to titrate the tetracycline downward over the ensuing months to find the minimal effective dose or until the antibiotic can be discontinued. Tetracycline is best taken one hour before meals or two hours after meals to avoid the decreased absorption caused by foods containing aluminum, calcium or magnesium cations. A twice a day dosage regimen is best for compliance purposes. Tetracycline is usually used in combination with benzoyl peroxide or topical Retin A because tetracycline is not effective against comedonal lesions.[2] Tetracycline is effective, and relatively free of problems. Candidial vaginitis, gastrointestinal complaints, or onycholysis may occur with prolonged use. Erythromycin and minocin are alternatives to the use of tetracycline. Tetracycline appears to be the most effective in its ability to inhibit growth of P. acnes. Topical antibiotics are most effective in the treatment of inflammatory acne. Topical antibiotics have the advantage of decreased total absorption and decreased systemic toxicity.[8]

Table

Comedolytics	**Topical Bacteriostatics**
Topical Retinoic Acid	Benzoyl Peroxide
Benzoyl Peroxide	Erythromycin
	Tetracycline
	Clindamycin
Exfoliants	**Oral Bacteriostatics**
Sulfur	Tetracycline
Resorcinol	Erythromycin
Abrasives	Minocin
Liquid Nitrogen	
Other Therapy	
Acne Surgery	
13-CIS Retinoic Acid	
Dapsone	
Estrogens	
Zinc	

Clindamycin is the most frequently used topical antibiotic.[9] Twice daily usage of topical clindamycin significantly decreases pustule and papule counts. Topical clindamycin is not effective against comedones. A combination of topical clindamycin and benzoyl peroxide or topical retinoic acid would be effective against comedones and pustules and papules.

Topical erythromycin has been demonstrated to be effective in significantly decreasing pustule and papule counts.[7] Mild irritancy may be observed with topical erythromycin. Topical erythromycin may be used alone in mild acne or with tetracycline systemically in pustular or papular acne. It can be utilized with topical retinoic acid in comedonal acne.

13-CIS retinoic acid (accutane) is the therapy of choice for nodular cystic acne.[10] It is not recommended for milder forms of acne. The mechanisms of action of 13-CIS retinoic acid include biochemical, antibacterial and specific anatomic effects.[10] Accutane decreases sebum production and inhibits polymorphic neutrophilic lysozymes. 13-CIS retinoic acid is available as Accutane, in capsules of 10, 20, and 40 mg size. The average dose is 1 to 2 mg/kg/day. Medication is given in this divided dose, morning and night for 16 to 20 weeks. Baseline liver function tests triglycerides and high-density lipoprotein cholesterols and blood counts are drawn. These tests are repeated four weeks after starting therapy and at the conclusion of the therapeutic course.[10] If major changes in these values occur the medication must be withdrawn. Side effects are lip chapping, cheilitis, conjunctivitis, and facial desquamation. Thirty to forty percent of patients may experience elevation of serum triglycerides and decreases in high-density lipoproteins.

Diet

Recent controlled studies refute the value of dietary restrictions imposed upon acne patients. The concept that chocolate exerts an adverse effect on acne has also been challenged. In a controlled double-blind study, chocolate failed to affect the course of acne vulgaris.[4]

Conclusion

There is no single treatment for acne vulgaris. Therapy must be individualized. Success of therapy depends to a great extent on patient compliance. Patients must be aware that a therapeutic response takes months. Therapeutic goals can be achieved by proper selection of available medications. Patients should be forewarned of remissions and exacerbations during therapy and that treatment must continue for as long as the acne persists.[7]

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Psychiatric Disorders

Group Treatment for Bulimic Women

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Abstract

This paper describes the development and preliminary assessment of a group approach to bulimia Results for five female participants on standardized measures indicated a dramatic decrease, maintained at follow-up, in the frequency of binges and purges, along with improvements in body image, self-esteem and depression. The implications of these findings are discussed.

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ntroduction

Recently the eating disorder, bulimia, has received ncreasing attention in both the professional and opular press. Its clinical features include rapid onsumption of food in a short period of time follwed by ttempts to counteract this excessive intake by self-nduced vomiting, laxative abuse or extreme dietary estriction. Self-depreciating thoughts and a sense of oss of control typically follow this behavior.[1] Several ealth hazards are typically associated with bulimia, ncluding rotting teeth, kidney failure, stomach or sophagus ruptures, throat blisters, electrolyte imbal-nce, hypoglycemia, icy hands and feet, and depression, mong others.[2] Although bulimia was once considered a are disorder,[3] recent studies indicate an increase in its requency in both clinical[4] and subclinical[5-7] opulations.

In spite of growing attention to bulimia and its egative psychological[8,9] and physiological conse-uences, there has been very little written on the reatment of this disorder. Existing treatment has ocused primarily on the modification of eating habits ather than the personality deficits that may co-exist with his disorder.[10,11] Although some authors view bulimia as circumscribed eating disorder,[11] Katzman and Volchik[12] observed that when compared to controls on tandardized measures, bulimics suffered from greater lepression, lower self-esteem, poorer body image, a nore severe need for approval and higher self-xpectations. In addition, it appears that binge eating is ften precipitated by a difficulty in handling negative motional states such as anger or anxiety[13-16] for women vho are trying to attain unrealistic cultural goals for hinness.[17] Despite the awareness of these clinical eatures associated with bulimia, no treatment program or this eating disorder has systematically addressed hem in its approach.

This paper describes a comprehensive group reatment program that was developed, based on the bove research findings. In contrast to previous treatment programs, the group's goal was to increase the bulimic's comfort with herself and her body. While behavior modification was used to help the women gain control over their dysfunctional eating pattern, most of he attention was on developing new competencies ather than the binge-purge cycle itself. What follows is a description of the rationale and details of the program.

Method

Patients

Five single females with a history of bingeing followed by self-induced vomiting or laxative abuse participated n the group. At presentation, they were averaging 47 binges and 43 purges a month. Patients participated in the group following a preliminary, individual interview. The mean age of the women was 21, with a range from 18 to 28. Four of these were college students; one was a nurse. Three of the patients had a history suggestive of anorexia nervosa, but at presentation all five were within 20% of the average weight for their height and age.[18] These women were all bright, attractive, achievement-oriented, college aged women who despite their achievements and professed desire for independence, highly endorsed the traditional feminine stereotype and measured their success by how attractive they appeared to the opposite sex.

Treatment

Treatment was conducted on an outpatient basis. It consisted of seven weekly 1-1/2 hour group sessions and one follow-up session ten weeks after the termination of the group. Treatment was both didactic and experiential. A treatment packet was developed for each session which consisted of reading materials, exercises and homework for that particular session. It was intended to be used as a workbook and as a self-help guide for maintenance after termination of the program. The packet also included a binge-purge diary where women were asked to record what they ate, their feelings and thoughts prior to eating and alternative coping skills they could have used.

The primary goal of the group was to help women gain control over their lives. A parallel goal was the identification and modification of eating habits. Homework assignments included behavioral exercises, readings, and keeping a binge-purge diary. Each session focused on a particular topic which addressed a personality or behavioral deficit associated with research findings about bulimia. These topics included information about bulimia, developing alternative coping strategies, self-esteem, perfectionism, depression, anger, cultural expectations of thinness for women and enhancing body image. Following is a detailed description of each session.

Session 1: Education and Information

An educational overview of bulimia was given, which included both a description of the problem as well as associated psychological and physiological health hazards. Women were told that the main emphasis in the group was to raise self-esteem. They were encouraged to talk about feelings rather than food intake. It was stressed that bingeing and purging were not outside their control but learned behaviors that could be modified if they were willing to take the responsibility. Bulimia was presented as a bad habit rather than as an incurable disease. This gave them a sense of competency and control over their lives and instilled hope. Because of the bulimic's tendency to be very perfectionistic, group members were told to hold realistic expectations of change. The attenuation of bingeing and purging was stressed rather than the complete alleviation of the symptom.

Group cohesiveness was encouraged by dealing with issues of shame, guilt and disgust about their behavior, their sense of isolation and societal expectations of being thin.

During this session, the pretreatment assessment packet was administered. This included the Katzman and Wolchik operationalized criteria for bulimia,[12] the Kurtz body attitudes test,[19] the Rosenberg Self-Esteem

Inventory,[20] and the Beck Depression Inventory.[21] These standardized measures were used to objectify patients' self-reports.

The first week's homework was to read and review information about bulimia and to start recording in the binge diary.

Session 2: Eating as Coping: Developing Alternative Coping Strategies

In this session, the binge diaries were reviewed and used to identify feelings prior to losing control. Alternative coping responses for each woman were suggested. A handout was developed to help women change their thinking surrounding their eating behavior. Women were also given an overview of alternative stress management techniques.

In addition, some basic information on nutrition and weight loss was presented because bulimics tend to have a very distorted conception of what is "normal" food intake. They were shown that it is possible to eat a larger quantity of food than they perceived possible in order to maintain their weight. They were encouraged to eat three meals a day rather than starve themselves which inevitably leads to bingeing behavior.

For homework, they were asked to review the materials and to develop their own list of alternative coping behaviors.

Session 3: Self-esteem, Perfection and Depression

The relationship between depression, self-esteem and perfectionism was discussed in this session. Typically, bulimics set unrealistic goals. Failure to attain these goals results in frustration. The consequent depression and loss in self-esteem leads to binge-eating to alleviate these negative states which further perpetuates this cycle. Women participated in three exercises, one to help them identify the "shoulds" they conduct their lives by, a second one to help them learn ways to "nourish" themselves without food, and a third to help them identify their positive traits.

For homework, women were told to perform one "nourishing" activity other than eating and to ask three people to tell them what they liked about them.

Session 4: Anger and Assertiveness

Since bulimics have trouble expressing negative emotional states, some assertiveness skills were reviewed, and a specific exercise on expressing anger was conducted.

For homework, they were told to say "no" to three things they didn't want to do anyway but felt they should, and "yes" to three things that they would normally want but not allow themselves to have.[22] They were also asked to record situations where they felt angry and how they handled them.

Session 5: Cultural Expectations of Thinness for Women

In this session, exercises focused on the socialization of the sexes and the ways in which women abuse themselves and their bodies in their quest to adhere to cultural definitions of the "perfect woman." The relation of these unrealistic expectations to the binge-purge cycle was discussed.

For homework, they were given exercises to help them accept their bodies and correct their distorted perceptions of it.

Session 6: Enhancing Body Image

Women identified their attractive features while group members provided them with feedback.

For homework, they were asked to pick one of their "attractive behaviors" and exaggerate it, i.e., to change something behaviorally that would improve their attractiveness. They were also told to change something in their appearance aside from losing weight.

Session 7: Closure

In the last session, each person's progress was assessed, future directions were suggested, and they were prepared for possible relapse. In addition, group members were encouraged to continue to keep the binge-purge diary and to review their packet from time to time. The standardized measures given at the first session were readministered at this time and at a ten-week follow-up, along with a questionnaire designed to assess changes in eating habits and to evaluate the program.

Results

The results reviewed in this section need to be seen as a preliminary test of this treatment program. Given the limited sample size, results were analyzed as a way of identifying possible trends in the data. Firm conclusions regarding this program await replication with a larger sample.

Results on Standardized Measures

Overall, the findings indicate that by the end of treatment, the frequency of bingeing and purging was reduced by over two thirds of what it was at the beginning. These women also showed improvement in body image, self-esteem and depression. All of these changes were maintained at follow-up, with continued improvement in body image, self-esteem and depression. These means are listed in Table 1.

Table 1

Means For All Group Members (N=5)

	Pre	*Post*	*F.U.*
# Binges/Mo.	47	13	15
# Purges/Mo.	43	12	23
Body Image ***	124	97	86
Self-Esteem *	27	25	19
Depression **	20	13	6

Using a one way ANOVA with repeated measures

*** = significantly different at P≤ .01

** = significantly different at P≤ .05

* = significantly different at P≤ .10

NOTE: High scores on the self-esteem measure reflect deficits in self-esteem.

A preliminary analysis of the data revealed strong arallel trends for four of the five women, with a clearly eviant pattern for the fifth patient. Since this patient as clearly different from the other four in age, ccupation, and her general approach to the group, the esults of these four patients will be presented as a group nd compared with her results. (See Table 2).

Table 2

Comparison of Means For Four Group Members With Atypical Member

N = 4

	Pre	*Post*	*F.U.*
# Binges/Month ***	59	16	4
# Purges/Month *	54	12	14
Body Image **	127	95	91
Self-Esteem ***	29	24	17
Depression ***	24	12	6

N = 1

	Pre	*Post*	*F.U.*
# Binges/Month	1	5	60
# Purges/Month	1	15	60
Body Image	117	108	67
Self-Esteem	21	30	26
Depression	4	19	5

Using a one way ANOVA with repeated measures
***** = significantly different at P≤ .01**
**** = significantly different at P≤ .05**
*** = significantly different at P≤ .10**

The data indicates that by separating the results of the our from the atypical group member, the findings ecome more dramatic. The atypical patient became orse during the course of treatment. At follow-up, her ncrease in her frequency of bingeing and purging ecame even more pronounced. However, her level of epression and self-esteem appeared to be returning to nitial levels. This unusual pattern of results will be iscussed in the following section.

esults of the Post-Treatment Questionnaire

The results of the post-treatment questionnaire were onsistent with results on the standardized measure and rovided additional qualitative data. In addition to a lecrease in the number of binges and purges following reatment, the four patients also reported a decrease in he length and caloric content of the binge and an ncrease in the number of whole days without bingeing nd the use of alternative coping strategies. In addition, wo of the patients reported no longer weighing hemselves daily. However, no group member indicated hat she had established a three-meal a day eating attern. The atypical patient changed in the opposite direction or showed no change in these behaviors. (See able 3).

Table 3

Results On Post Treatment Questionnaire

	N = 4	*N* = 1
# Binges	↓	↑
# Purges after binging	↓	↑
Length of binge	↓	↑
# Whole days with no binge	↑	↓
Use of alternate coping strategies	↑	↓
Caloric intake of each binge	↓	no change
Weighing self daily	2↓ 2 no change	no change
Eating 3 meals per day	no change	no change

Discussion

This paper described the systematic development of a group treatment approach to bulimia based primarily on the research findings of Katzman and Wolchik,[12] which suggested that bulimic women suffer from low self-esteem, poor body image, perfectionistic strivings and depression. Although the group focused primarily on enhancement of personal competencies, a dramatic reduction in the frequency of bingeing and purging occurred. Pronounced improvements were noted for the women participating in this group in their self-esteem, depression and body image, and this program was maintained at follow-up. Data suggests that bulimia may be more than a circumscribed eating disorder and that treatment targeted at problems rather than the disturbed eating pattern may be necessary.

Several features of this program deserve attention. Bulimia was presented as a learned habit rather than an incurable disease. This attitude forced patients to take responsibility for their behavior and instilled hope for change. The use of a packet in conjunction with group sessions helped extend the therapeutic value beyond the 1-1/2 hour group session and gave members material to refer to during the week and even after the group terminated. Helping patients to accept themselves and not be perfectionistic was an integral first step in bringing about a reduction in the deviant eating behavior.

The finding that one patient moved in a diametrically opposing direction from the rest of the group warrants some comment. In a post-group.interview with her, this patient related her "oppositional tendencies" which were reflected in her abusing food as a means of understanding authority. This suggests that all bulimics may not benefit from a standardized group treatment and that better screening procedures need to be developed to identify these patients.

There are several implications for physicians who come in contact with bulimics. Bingeing and purging are generally secretive behaviors, and bulimics do not readily volunteer this information. The physician can routinely ask about women's eating habits and be sensitive to any statements on the part of patients that they sometimes eat too much. This is particularly true for college aged women who appear well-groomed and show a high need for achievement. Throat blisters and other health hazards associated with bulimia should be warning signals to pursue this line of questioning. For dentists, rotting teeth can serve as a cue. Once the physician recognizes this problem in a patient, he can discuss with her possible psychological and physiological consequences rather than dismiss it lightly. He can also offer reassurance and instill hope in these women who view themselves and their deviant eating patterns as hopeless and out of control by making them aware of treatment resources.

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Radiology

Case of the Month No. 70

Richard M. Spiegel, M.D.
Richard T. McDermott, M.D.
Jonathan M. Levy, M.D.

Editor:
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A 72-year-old man complained of chest and upper abdominal pain. An Upper GI series (Figure 1) showed two abnormalities in the esophagus.

What are the abnormalities?

What diagnosis does the coexistence of these abnormalities suggest?

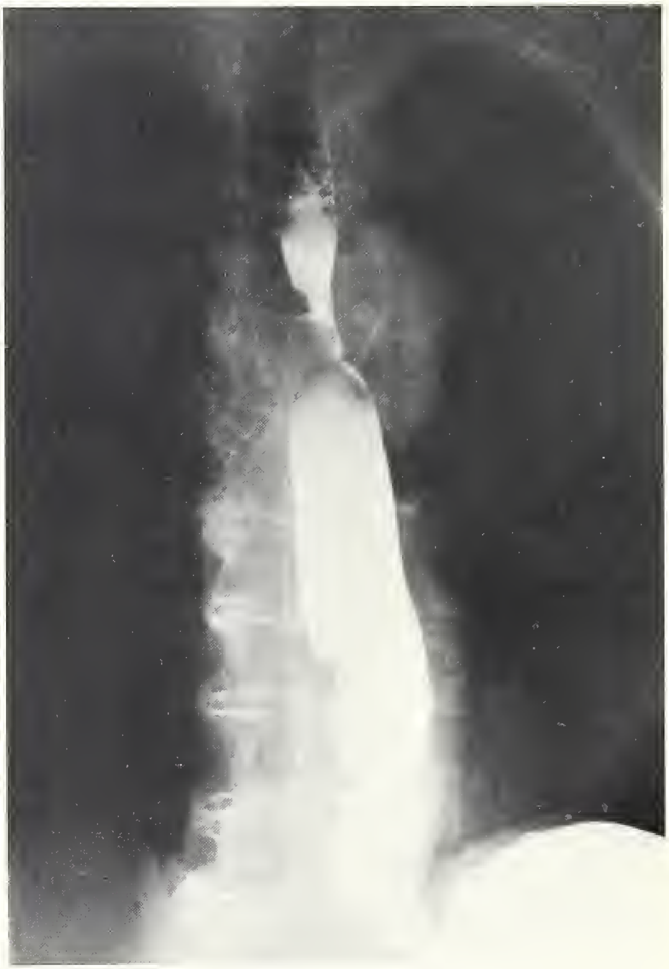

Figure 1
Film of the esophagus

(Continued on next page)

From: The Departments of Diagnostic Radiology (RMS, JML) and Gastroenterology (RTM), Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251. Reprint requests to Jonathan M. Levy, M.D., Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251.

Answer: Barrett's esophagus, with stricture and ulceration.

Films of the esophagus demonstrate two distinct abnormalities; a focal area of persistent narrowing (stricture) in the mid esophagus, and a large, smooth ulcer crater just above the esophagogastric junction. (Figure 2). While malignant stricture and ulceration should be considered, several characteristics of the abnormality suggest benignancy. These include the smooth tapering of the stricture, the contour of the ulcer crater and the separation between the two lesions. The appearance is, however, quite characteristic of Barrett's esophagus.

In Barrett's esophagus, the normal squamous epithelium of the lower esophagus is replaced by columnar epithelium characteristic of the gastric mucosa. While early reports assumed that this was a congenital defect due to incomplete differentiation and maturation of the lining cells, evidence has since shown that the columnar epithelium appears either by metaplasia of the squamous layer, or by cephalad migration of gastric lining in response to direct refluxing stomach acid. The concept of reflux esophagitis is central to Barrett's esophagus, and hiatus hernia is commonly present. Characteristically, a stricture forms in the middle third of the esophagus, usually at the new squamous-columnar junction. (Figure 2). As in this case, benign ulceration is typical. The ulcers are frequently large, penetrating and smooth walled. (Figure 2).

Probably the most significant aspect of Barrett's esophagus is the relatively high incidence of development of esophageal adenocarcinoma, which occurs in about ten percent of cases (reported incidence ranges from 3% to 40%). As both the abnormal lining and the carcinoma are presumably related to chronic irritation engendered by reflux, antireflux surgery has been advocated in the past. There are anecdotal reports of healed ulcer, and even regression of the columnar epithelium back toward the stomach, following such surgery. Recently, prospective studies of therapy with Cimetidine have, not unexpectedly, shown improvement in the ulcerations, but no return to squamous epithelium has been documented as yet. In one case, development of stricture occurred while the patient was taking the medication.

Current management recommendations for Barrett's esophagus include dilatation of the stricture as required, routine antireflux measures, antacid and/or Cimetidine drug regimen and careful follow-up. This should include periodic endoscopy to evaluate for neoplastic degeneration. Antireflux surgery should be considered if medical management fails.

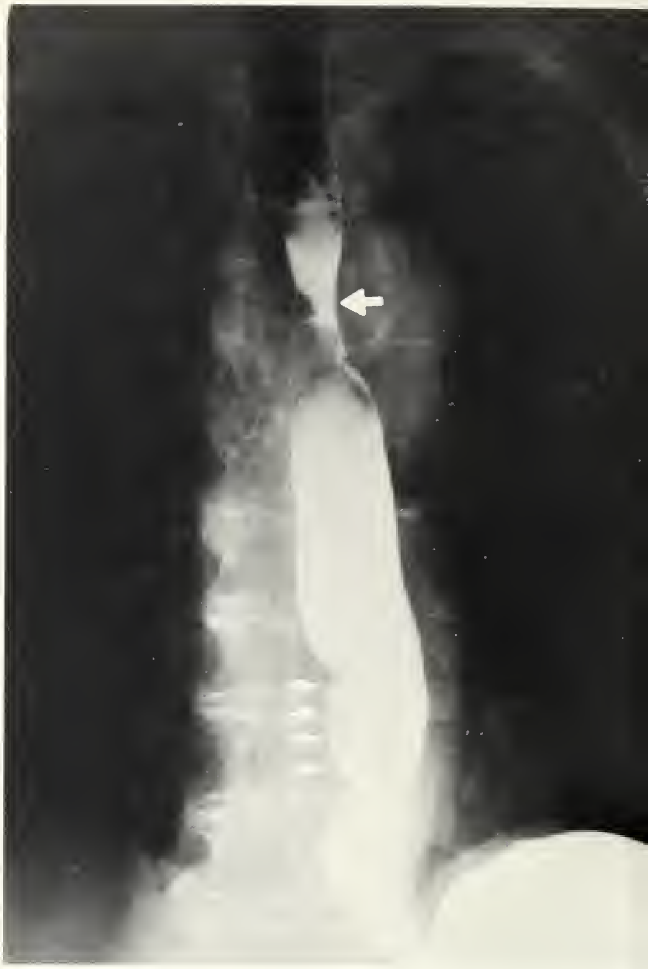

Figure 2
Stricture (large arrow) and large, smooth ulcer (small arrow of the esophagus.

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Myths and Facts in End-Stage Renal Disease Treatment

Daniel J. Potter, M.D., F.A.C.P.

Editor:
Donald Schon, M.D.

ditor's Note:

The End Stage Renal Disease Program since 1937 has been one of the nost successful and cost effective Medicare funded programs devised.

However, many myths and misconceptions abound concerning ases, reimbursement and longevity.

Over the following year we hope to explore treatment modalities urrently available in Arizona and with an eye on what will be available n the future.

The first article in this series is an overview and perspective on costs nd survival. The author, Dr. Daniel Potter, has practiced nephrology n Arizona for over 20 years and was among those attending the first lialysis patient in Arizona.

ntroduction

Nineteen years ago the first patient in Arizona was tarted on regular hemodialysis[1] and fifteen years ago he first transplant in Arizona was performed.[2]

In those early years, both therapies were regarded as exotic, costly, and available only to a few.[2]

In 1973, therapy of End-Stage Renal Disease became eimbursed by Medicare, and suddenly accessible to almost everyone needing it.

The expressed purpose of the legislation enabling Medicare reimbursement was to "make End-Stage Renal Disease care accessible to those who need it." This purpose was successfully fulfilled and in six years the number of patients on dialysis quadrupled. So did the cost of the program. From this time on, Congress has been struggling to contain its cost.

The media has trumpeted about "runaway costs." Physicians not in direct contact with the program often have negative attitudes about the program, both as to costs and results.

The following is an attempt to deal with some of the misinformation about End-Stage Renal Disease, and to summarize the availability and results of End-Stage Renal Disease treatment in Arizona in 1983.

Costs

Myth—the Medicare End-Stage Renal Disease Program has runaway costs.

Fact—the Medicare End-Stage Renal Disease Program's per capita cost has increased less than five percent per year since 1973, and is presently decreasing.[3]

In 1974, the first full year of the Medicare Program, the cost per patient was $20,818, and there were 11,000 patients.

By 1979, there were 42,500 patients and the per capita cost was $21,058.[3]

These trends are continuing and the per capita costs for 1982 are *lower* than 1981.[3]

The basic reasons for this are: 1) The Medicare reimbursement limit of 80% of $138.00 per dialysis on propriety dialysis facilities has not changed despite double digit inflation during many of these years.[3] 2). The fact that costs for hospitalization of these patients are *decreasing* (in dramatic contrast to the rest of the Medicare population).[3]

Discharges are down 19%, average length of stay is down 19%, and days of care are down 34%, thus offsetting the large increases in hospital cost per day during this period (1973 to 1979).[3]

Of course, the increased number of patients treated by this program (65,765 at the end of 1982) has resulted in the increased costs of the program. These costs led to new regulation by HCFA, which many feel are draconian decreases in reimbursement, which were effective August 1, 1983.[5]

Per capita costs will drop even more substantially due to these new regulations, but it remains to be seen whether the quality of care in End-Stage Renal Disease will suffer (many including the author believe it has and will), and whether chaos will be created through bankruptcy of dialysis facilities.

Results

Myth—Most patients on dialysis die within a year or two.

Fact—Diabetes, age over sixty, and presence of significant heart disease have been identified as significant risk factors in almost all careful studies.[6-8] In the absence of these negative factors, the average survival in most studies is about six years.[4] Survival in excess of ten years is not at all uncommon.

With insulin dependent diabetes mellitus, the average survival rate at *three* years is down to 39%.[4,6] Successful transplantation increases the rate to 65% at three years (cadaver transplant) and 82% at *three* years (related donor).[6,8]

These statistics, of course, do not address the moral issue of dialysis in the elderly patient with severe complicating disease. The nephrologist, patient and family are frequently confronted with a very difficult "no win" situation. If in his judgment the probable

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quality of life will not be acceptable to the patient, the nephrologist (in my opinion), has a duty to firmly inform the patient of his opinion. If the patient-family unit still desires dialysis, in the present medico legal environment, the patient gets his/her desire.

Transplants

Myth—Transplants are costly and the failure rate is high.

Fact—Transplants have been identified as the least costly form of End-Stage Renal Disease therapy by HCFA.

Results since 1978 have steadily improved i.e. cadaver grafts success rate at one year was 53% in 1978; 61% in 1980.[7]

Related donors was 73% in 1978; 82% in 1980.[7]

A very recent transplant outcome study[7] conducted by the Medical Review Board of Network VI, has identified success rates at one year in Arizona transplant centers as:

Cadaver Donor: 79%, Phoenix, and 65% Tucson; Related Donor: 100%, Phoenix, and 77% Tucson.

	Phoenix	Tucson
Cadaver Donor	79%	65%
Related Donor	100%	77%

Table 1
Transplant Centers

Phoenix	
Transplants performed 1981-82	79
Success at one year — related donors (34)	100%
Success at one year — cadaver donors (45)	79%
Tucson	
Transplants performed 1981-82	30
Success at one year — related donors (18)	79%
Success at one year — cadaver donors (12)	65%

These are indeed excellent results. They are not intended to differentiate parochially between the two centers. The study was for a brief period (last two years). Arizona patients have access to two fine centers. Study of results for a different period of time might well show comparable results.

Arizona Dialysis Facilities[8]

In-center dialysis, home dialysis training and support, and transplantation are available in the Phoenix and Tucson areas.

In-center dialysis is available at small rural units in Yuma, Cottonwood, and Tuba City.

See Table 2 for listing of patient numbers in those areas.

Table 2
Arizona Dialysis Facilities

Maricopa County **12 facilities; 4 offer home training**	
Patients In-center	4
Patients on Home Hemodialysis	
Patients on Home CAPD (Continuous Ambulatory Peritoneal Dialysis)	
Total	5
Pima County **3 facilities; 2 offer home training**	
Patients In-center	1
Patients on Home Hemodialysis	
Patients on Home CAPD (Continuous ambulatory Peritoneal Dialysis)	
Total	2
Tuba City **One facility**	
Patients In-center	
Yuma **One facility**	
Patients In-center	
Cottonwood **One facility**	
*Patients In-center	

*Opened September, 1983

Conclusion

Costs and current results of End-Stage Renal Diseas treatment have been briefly discussed.

Dialysis prolongs life for at least six years in the majority of patients under 60 years of age, without diabete or significant heart disease.

Success rates for transplantation in Arizona in the pas two years have been excellent both in related donor and cadaveric groups.

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Special Article

Status Report: Evaluating Hazards o Reproduction

almer C. Evans, M.D.

Reproductive function and the sanctity of the gene ool have always been concerns of the health care rofession. We are becoming more aware of risks to rocreation as our patients and the press relate to us oncerns over exposure to chemicals and physical gents in the workplace and in the home.

The problem has been defined recently because of e number of women entering the work place. It has een estimated that by 1990, 60% to 70% of women in e reproductive age group will be employed, and nce 1978 passage of Title VII of the Civil Rights Law mended for pregnancy, we are finding more women orking jobs that had traditionally been exclusively ale. Hence, a natural evolution is the evaluation of e male and, more recently, the couple for their otential for adverse reproductive effects.

The purpose of this paper is to briefly outline some f the areas under study and to emphasize some of e difficulties being encountered.

There are three areas that must be included in the valuation of environmental hazards to reproduction. ney are the effect of chemical exposure, the effect f physical agents, and the effect that pregnancy has n a woman's ability to work.

There are approximately 50,000 chemicals being used today, with that number increasing yearly. At least 500 have been implicated as having potential reproductive effects. Of these, less than 100 can be categorized and conclusions drawn as to safety in the workplace. Most conclusions have been drawn from animal study, and many studies lack statistical validity.

Physical exposures pose a different set of concerns. We are somewhat familiar with potential effects of ionizing radiation, electromagnetic waves, microwaves, noise, vibration, hyperthermia and atmospheric conditions. We also have some knowledge of ultrasound. Much more information is needed, however, before we can say that we truly understand the effects of these exposures.

As to the effect of pregnancy on the ability to work, very little has been evaluated either ergonomically or psychomatically. If we critically evaluate most of the information we have and the decisions we make, we find that they are based on no known scientific reason. Since the Pregnancy Discrimination Act, we are being asked more and more to make a judgment about when disability begins in pregnancy. Only now through the American Medical Association Advisory Panel on Reproductive Hazards in the Workplace, are guidelines being presented for the use of the clinician. In the past, only when a medical condition threatened a pregnancy have we been able to scientifically base our determination of disability in pregnancy.

In evaluating hazards both retrospectively and prospectively, epidemiologists are finding it difficult to get adequate information to make definite conclusions. In designing studies to definitively evaluate birth defects for example, one must take into account confounding variables such as smoking and alcohol use, both male and female exposure, and exposure in the home as well as the workplace. The size of the data base needed to adjust for such variables is staggering.

Fortunately, the field of genetic toxicology is rapidly becoming able to evaluate the action of agents that could exert toxic effects on reproductive function. There are, at present, six bioassays available for such use. A good example of these is sister-chromatid exchanges that measure chromosomal aberration, and specific tests designed to predict mutagenesis.

Our knowledge of male and female reproductive function has greatly advanced in the last few years. Reproductive biologists have provided us with the understanding of the incredibly complex number of events that must occur in order to achieve fertilization and subsequent delivery of a healthy human being. An understanding of each of the biological events that takes place is essential to understanding how occupational exposures can affect the outcome.

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BRIEF SUMMARY
PROCARDIA® (nifedipine) **CAPSULES** For Oral Us

INDICATIONS AND USAGE I Vasospastic Angina: PROCARDIA (nifedipine) is indicated for th management of vasospastic angina confirmed by any of the following criteria 1) classical patter of angina at rest accompanied by ST segment elevation 2) angina or coronary artery spasm pro voked by ergonovine or 3) angiographically demonstrated coronary artery spasm In those patient who have had angiography the presence of significant fixed obstructive disease is not incompatib with the diagnosis of vasospastic angina provided that the above criteria are satisfied PROCARDI may also be used where the clinical presentation suggests a possible vasospastic component bu where vasospasm has not been confirmed e g where pain has a variable threshold on exertion o in unstable angina where electrocardiographic findings are compatible with intermittent vaso spasm or when angina is refractory to nitrates and or adequate doses of beta blockers

II Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated fo the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and or organic nitrate or who cannot tolerate those agents

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlle trials of up to eight weeks duration in reducing angina frequency and increasing exercise toleranc but confirmation of sustained effectiveness and evaluation of long-term safety in those patients ar incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA an beta blocking agents may be beneficial in patients with chronic stable angina but available info mation is not sufficient to predict with confidence the effects of concurrent treatment especially i patients with compromised left ventricular function or cardiac conduction abnormalities When in troducing such concomitant therapy care must be taken to monitor blood pressure closely sinc severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS Known hypersensitivity reaction to PROCARDIA

WARNINGS. **Excessive Hypotension**: Although in most patients the hypotensive effect o PROCARDIA is modest and well tolerated occasional patients have had excessive and poorly to erated hypotension These responses have usually occurred during initial titration or at the time o subsequent upward dosage adjustment and may be more likely in patients on concomitant be blockers

Severe hypotension and or increased fluid volume requirements have been reported in patient receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypas surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to b due to the combination of PROCARDIA and a beta blocker but the possibility that it may occur wit PROCARDIA alone with low doses of fentanyl in other surgical procedures. or with other narcot analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dos fentanyl anesthesia is contemplated the physician should be aware of these potential problems and if the patient s condition permits sufficient time (at least 36 hours) should be allowed fo PROCARDIA to be washed out of the body prior to surgery

Increased Angina Occasional patients have developed well documented increased frequency du ration or severity of angina on starting PROCARDIA or at the time of dosage increases The mech anism of this response is not established but could result from decreased coronary perfusio associated with decreased diastolic pressure with increased heart rate or from increased deman resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a with drawal syndrome with increased angina probably related to increased sensitivity to catecho amines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expecte to exacerbate it by provoking reflex catecholamine release There have been occasional reports o increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is importar to taper beta blockers if possible rather than stopping them abruptly before beginnin PROCARDIA

Congestive Heart Failure. Rarely patients. usually receiving a beta blocker have developed hea failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater risk fo such an event

PRECAUTIONS General Hypotension Because PROCARDIA decreases peripheral vascula resistance careful monitoring of blood pressure during the initial administration and titratio of PROCARDIA is suggested Close observation is especially recommended for patients alread taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema Mild to moderate peripheral edema typically associated with arterial vaso dilation and not due to left ventricular dysfunction occurs in about one in ten patients treated wit PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuret therapy With patients whose angina is complicated by congestive heart failure. care should be take to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experienc in over 1400 patients in a non-comparative clinical trial has shown that concomitant administratio of PROCARDIA and beta-blocking agents is usually well tolerated but there have been occasion literature reports suggesting that the combination may increase the likelihood of congestive hea failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates, but there hav been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelv normal volunteers The average increase was 45% Another investigator found no increase in di goxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over tw hundred patients with congestive heart failure during which digoxin blood levels were not meas ured digitalis toxicity was not observed Since there have been isolated reports of patients wit elevated digoxin levels it is recommended that digoxin levels be monitored when initiating, adjus ing, and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis mutagenesis impairment of fertility When given to rats prior to mating nife dipine caused reduced fertility at a dose approximately 30 times the maximum recommended hu man dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity i rats embryotoxicity in rats mice and rabbits and abnormalities in monkeys

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness peripheral edema nausea weakness headache and flushing each occurring in about 10% of pa tients transient hypotension in about 5% palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antian ginal medication Additionally the following have been reported muscle cramps nervousness dyspnea nasal and chest congestion diarrhea constipation inflammation joint stiffness, shak ness sleep disturbances blurred vision difficulties in balance dermatitis pruritus. urticaria, fe ver sweating chills and sexual difficulties Very rarely introduction of PROCARDIA therapy wa associated with an increase in anginal pain possibly due to associated hypotension

In addition more serious adverse events were observed not readily distinguishable from the na ural history of the disease in these patients It remains possible however, that some or many o these events were drug related Myocardial infarction occurred in about 4% of patients and conges tive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturb ances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare mild to moderate transient elevations of enzymes such as alkaline phos phatase CPK LDH SGOT and SGPT have been noted and a single incident of significantly ele vated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladde disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy i uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis possibly due to PROCARDIA therapy has been reported twice in the extensive worl literature

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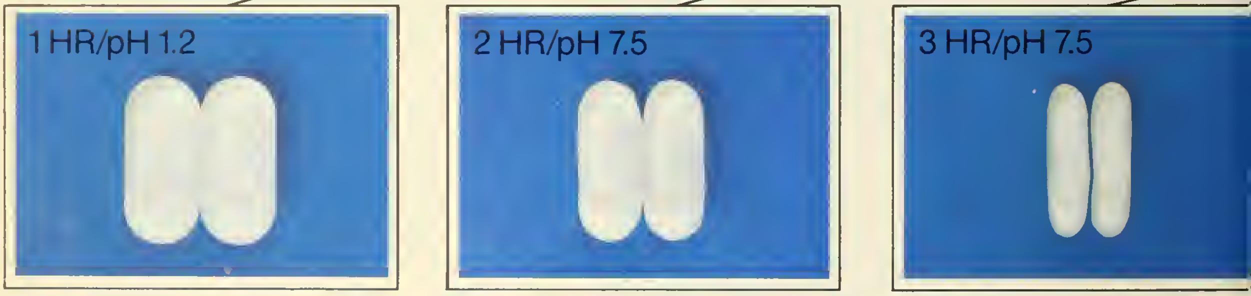

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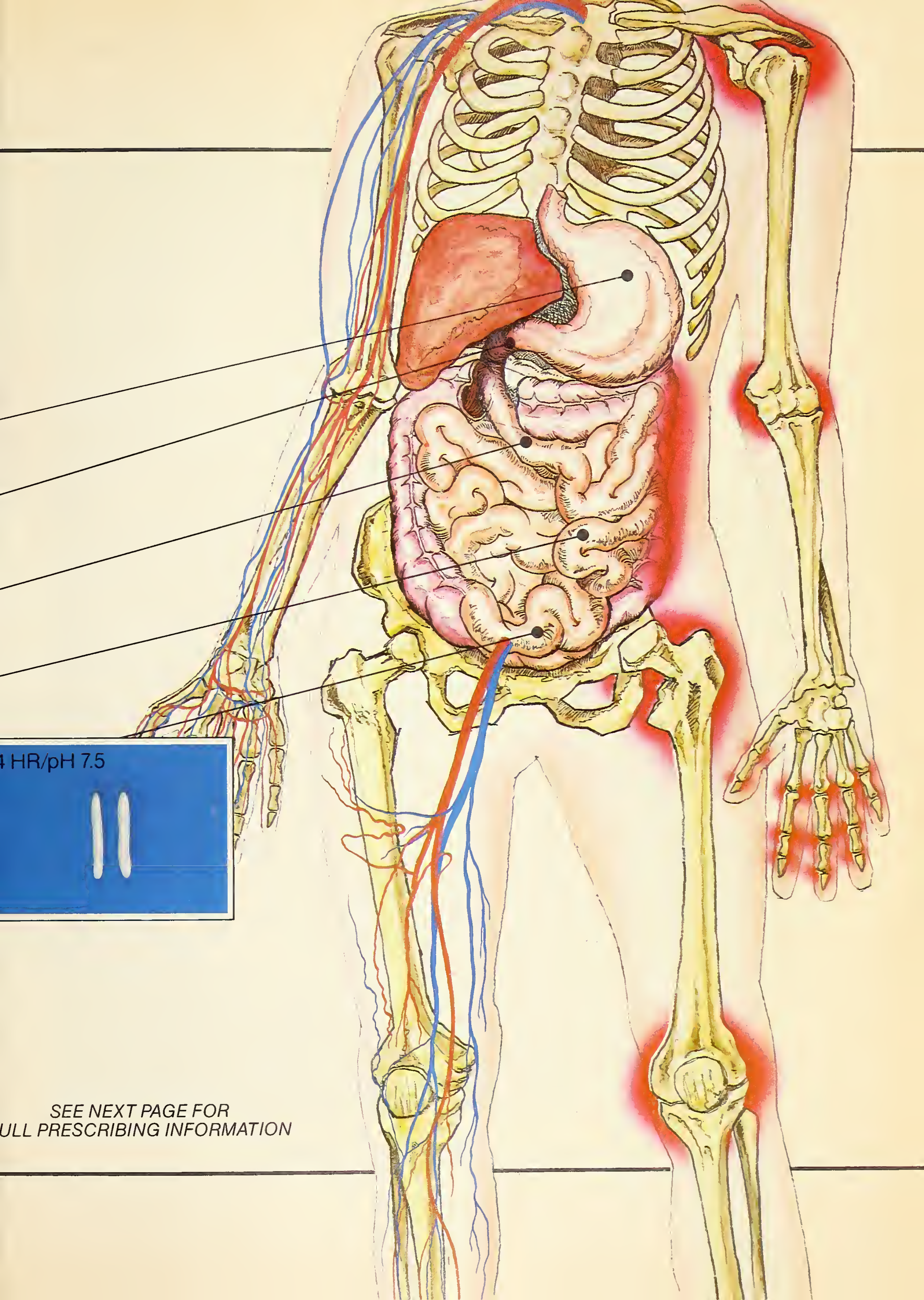

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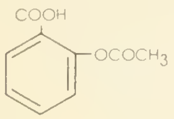

DESCRIPTION: Each capsule-shaped tablet of Zorprin contains 800 mg of aspirin, formulated in a special matrix to control the release of aspirin after ingestion. The controlled availability of aspirin provided by Zorprin approximates zero-order release, the *in vitro* release of aspirin from the tablet matrix is linear and independent of the concentration of the drug. ☐ **CLINICAL PHARMACOLOGY:** Aspirin, as contained in Zorprin, is a salicylate that has demonstrated anti-inflammatory and analgesic activity Its mode of action as an anti-inflammatory and analgesic agent may be due to the inhibition of synthesis of prostaglandins, although its exact mode of action is not known. ☐ Zorprin dissolution is pH-dependent *In vitro* studies have shown very little aspirin to be released in acidic solutions; whereas, Zorprin releases the majority of its aspirin (90%) in a zero-order mode at a neutral to alkaline pH It is this pH dependence of Zorprin that reduces direct contact between aspirin and the gastric mucosa, resulting in a reduction of its gastrointestinal side-effect potential. ☐ Bioavailability data for Zorprin have confirmed that plasma levels of salicylic acid and acetylsalicylic acid can be measured 24 hours after a single oral dose This substantiates a twice daily dose regimen. Multiple dose bioavailability studies showed similar steady-state salicylate levels for Zorprin as for conventional release aspirin using the same total daily dose. Long-term monitoring of salicylate levels showed no signs of accumulation once steady-state levels were reached (4-6 days). ☐ Studies of *in vivo* prostaglandin levels (PGE2) have shown Zorprin plasma levels of salicylic acid and acetylsalicylic acid to reduce PGE2 levels 14 hours after a single oral 800 mg dose while an equivalent dose of aspirin produced a reduction of PGE2 levels only through six hours Zorprin's effect on prostaglandins other than PGE2 has not been determined ☐ Salicylates are excreted mainly by the kidney, and from studies in humans it appears that salicylate is excreted in the urine as free salicylic acid (10%), salicyluric acid (75%) salicylic phenolic (10%); acyl glucuronides (5%) and gentisic acid (<1%). ☐ **INDICATIONS & USAGE:** Zorprin is indicated for the treatment of rheumatoid arthritis and osteoarthritis The safety and efficacy of Zorprin have not been established in those rheumatoid arthritic patients who are designated by the American Rheumatism Association as Functional Class IV (incapacitated, largely or wholly bedridden, or confined to wheelchair, little or no self-care). ☐ In patients treated with Zorprin for rheumatoid arthritis and osteoarthritis, the anti-inflammatory action of Zorprin has been shown by reduction in pain, morning stiffness and disease activity as assessed by both the investigators and patients. ☐ In clinical studies in patients with rheumatoid arthritis and osteoarthritis, Zorprin has been shown to be comparable to conventional release aspirin in controlling the aforementioned signs and symptoms of disease activity and to be associated with a statistically significant reduction in the milder gastrointestinal side effects (see ADVERSE REACTIONS). Zorprin may be well tolerated in some patients who have had gastrointestinal side effects with conventional release aspirin, but these patients when treated with Zorprin should be carefully followed for signs and symptoms of gastrointestinal bleeding and ulceration. ☐ Since there have been no controlled trials to demonstrate whether or not there is any beneficial effect or harmful interaction with the use of Zorprin in conjunction with other nonsteroidal anti-inflammatory agents (NSAI), the combination cannot be recommended (see **Drug Interactions**). ☐ **Because of its relatively long onset of action, Zorprin is not recommended for antipyresis or for short-term analgesia.** ☐ **CONTRAINDICATIONS:** Zorprin should not be used in patients known to be hypersensitive to salicylates or in individuals with the syndrome of nasal polyps, angioedema, bronchospastic reactivity to aspirin, renal or hepatic insufficiency, hypoprothrombinemia or other bleeding disorders Zorprin is not recommended for children under 12 years of age, it is contraindicated in all children with fever accompanied by dehydration. ☐ **WARNINGS:** Zorprin should be used with caution when anticoagulants are prescribed concurrently, since aspirin may depress platelet aggregation and increase bleeding time Large doses of salicylates may have hypoglycemic action and enhance the effect of the oral hypoglycemics, concomitant use therefore is not recommended However, if such use is necessary, dosage of the hypoglycemic agent must be reduced The hypoglycemic action of the salicylates may also necessitate adjustment of the insulin requirements of diabetics. ☐ While salicylates in large doses have a uricosuric effect, smaller amounts may reduce water excretion and increase serum uric acid. ☐ USE IN PREGNANCY Aspirin can harm the fetus when administered to pregnant women. Aspirin interferes with maternal and infant hemostasis and may lengthen the duration of pregnancy and parturition. Aspirin has produced teratogenic effects and increases the incidence of stillbirths and neonatal deaths in animals. ☐ If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus ☐ Aspirin should not be taken during the last 3 months of pregnancy. ☐ **PRECAUTIONS:** Appropriate precautions should be taken in prescribing Zorprin for patients who are known to be sensitive to aspirin or salicylates. Particular care should be used when prescribing this medication for patients with erosive gastritis, peptic ulcer, mild diabetes or gout. As with all salicylate drugs, caution should be exercised in prescribing Zorprin for those patients with bleeding tendencies or those on anticoagulants. ☐ In order to avoid exacerbation of disease or adrenal insufficiency, patients who have been on prolonged corticosteroid therapy should have their therapy tapered slowly rather than discontinued abruptly when Zorprin is made a part of the treatment program. ☐ Patients receiving large doses of aspirin and/or prolonged therapy may develop mild salicylate intoxication (salicylism) that may be reversed by dosage reduction. ☐ Salicylates can produce changes in thyroid function tests ☐ Salicylates should be used with caution in patients with severe hepatic damage, preexisting hypoprothrombinemia, Vitamin K deficiency and in those undergoing surgery ☐ Since aspirin release from Zorprin is pH dependent, it may change in those conditions where the gastric pH has been increased as a result of antacids, gastric secretion inhibitors or surgical procedures. ☐ **Drug Interactions:** (See **WARNINGS**) Aspirin may interfere with some anticoagulant and antidiabetic drugs. Drugs which lower serum uric acid by increasing uric acid excretion (uricosurics) may be antagonized by the concomitant use of aspirin, particularly in doses less than 2.0 grams/day Nonsteroidal anti-inflammatory drugs may be competitively displaced from their albumin binding sites by aspirin. This effect may negate the clinical efficacy of both drugs. Also, the gastrointestinal inflammatory potential of nonsteroidal anti-inflammatory drugs may be potentiated by aspirin. The combination of alcohol and aspirin may increase the risk of gastrointestinal bleeding ☐ Aspirin may enhance the activity of methotrexate and increase its toxicity ☐ Sodium excretion produced by spironolactone may be decreased in the presence of salicylates. Concomitant administration of other anti-inflammatory drugs may increase the risk of gastrointestinal ulceration. Urinary alkalinizers decrease aspirin's effectiveness by increasing the rate of salicylate renal excretion. Phenobarbital decreases aspirin's effectiveness by enzyme induction ☐ **Pregnancy Category D.** See **WARNINGS** Section ☐ **Nursing Mothers:** Salicylates have been detected in the breast milk of nursing mothers. Because of the potential for serious adverse reactions from aspirin in nursing infants, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the benefit of the drug to the mother. ☐ **ADVERSE REACTIONS: Hematologic:** Aspirin interferes with hemostasis. Patients with a history of blood coagulation defects or receiving anticoagulant drugs or with severe anemia should avoid Zorprin. Aspirin used chronically may cause a persistent iron deficiency anemia. ☐ **Gastrointestial:** Aspirin may potentiate peptic ulcer, and cause stomach distress or heartburn Aspirin can cause an increase in occult bleeding and in some patients massive gastrointestinal bleeding. However, the greatest release of active drug from Zorprin is designed to occur in the small intestine over a period of time. This has resulted in fewer symptomatic gastrointestinal side effects ☐ **Allergic:** Allergic and anaphylactic reactions have been noted when hypersensitive individuals have taken aspirin. Fatal anaphylactic shock, while not common, has been reported ☐ **Respiratory:** Aspirin intolerance, manifested by exacerbations of bronchospasm and rhinitis, may occur in patients with a history of nasal polyps, asthma, or rhinitis The mechanism of this intolerance is unknown but may be the result of aspirin-induced shunting of prostaglandin synthesis to the lipoxygenase pathway and the liberation of leukotrienes, *e.g.* slow-reacting substance of anaphylaxis. ☐ **Dermatologic:** Hives, rashes, and angioedema may occur, especially in patients suffering from chronic urticaria ☐ **Central Nervous System:** Taken in overdoses, aspirin provides stimulation which may be manifested by tinnitus. Following initial stimulation, depression of the central nervous system may be noted. ☐ **Renal:** Aspirin rarely may aggravate chronic kidney disease. ☐ **Hepatic:** High doses of aspirin have been reported to produce reversible hepatic dysfunction. ☐ **OVERDOSAGE:** Overdosage, if it occurs, would produce the usual symptoms of salicylism. tinnitus, vertigo, headache, confusion, drowsines, sweating, hyperventilation, vomiting or diarrhea Plasma salicylate levels in adults may range from 50 to 80 mg/dl in the mildly intoxicated patient to 110 to 160* mg/dl in the severely intoxicated patient. An arterial blood pH of 7.1 may indicate serious poisoning. The clearance of salicylates in children is much slower than adults and should receive due consideration when aspirin overdosages occur in infants; salicylate half-lives of 30 hours have been reported in infants 4-8 months old Treatment for mild intoxication should include emptying the stomach with an emitic, or gastric lavage with 5% sodium bicarbonate. Individuals suffering from severe intoxication should, in addition, have forced diuresis by intravenous infusions of sodium bicarbonate and dextrose or sodium lactate. In extreme cases, hemodialysis or peritoneal dialysis may be required ☐ (*A plasma salicylate level of 160 mg/dl in an adult is usually considered lethal.) ☐ **DOSAGE & ADMINISTRATION:** *In order to achieve a zero-order release, the tablets of Zorprin should be swallowed intact.* ☐ *Breaking the tablets or disrupting the structure will alter the release profile of the drug.* ☐ *It is recommended that Zorprin be taken with sufficient quantities of fluids (8 oz. or more).* ☐ **Adult Dosage:** For mild to moderate pain associated with rheumatoid arthritis and osteoarthritis, the recommended initial dose of Zorprin is 1600 mg (2-800 mg tablets) twice a day Because of Zorprin's prolonged release of aspirin into the bloodstream, Zorprin tablets may be taken as a b.i.d dose. Further adjustment of the dosage should be determined by the physician, based upon the patient's response and needs. Since it will take 4-6 days to reach steady-state levels of salicylic acid with Zorprin, it is recommended dosages be given for at least one week before further adjustment In general, patients with rheumatoid arthritis seem to require higher doses of Zorprin than do patients with osteoarthritis. ☐ **Zorprin is not recommended for children below the age of 12.** ☐ **HOW SUPPLIED: Zorprin Tablets 800 mg;** plain, white capsule-shaped tablets ☐ Bottles of 100 Tablets — NDC 0524-0057-01. ☐ **Caution:** Federal law prohibits dispensing without prescription. ☐ U.S Patent No. 4,308,251 ☐ **Manufactured and Distributed by: BOOTS PHARMACEUTICALS, INC., Shreveport, Louisiana 71106 U.S.A.**

12/8/83 0057-04

Pioneers in medicine for the family

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SHREVEPORT, LOUISIANA 71106 9989

Continued from page 109)

Not only must we deal with the epidemiology, the eproductive biology and the genetics of the roblem, but also with the many legal issues urrounding this complex subject. Some of the uestions being asked are: Who pays the cost for arm sustained in the workplace? Does industry have he right to remove workers because of reproductive isk? How is the right of privacy affected by genetic onitoring in industry? These are only a few of the egal issues which promise to remain in the forefront ntil solved.

Reproductive hazards, whether in the workplace or n the home, will be a major issue for us to deal with n the remainder of the 1980s. At present, what we an say with certainty about our knowledge of the arious hazards to reproduction is that too little is nown. While the scope of the task ahead of us is road indeed, the medical profession will need to ocus on solving these problems and developing nswers to the many questions that are currently nanswerable.

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Editorials

What Has Organized Medicine Done For Me?

This is a favorite question asked of me by a number of our colleagues. In the past, those of us who have the information were not too vocal about sharing what organized medicine has done for the physicians. A recent monumental service that was done by the American Medical Association, Arizona Medical Association and the county medical societies is the defeat of H.R. 4170, otherwise known as the Rostenkowski Bill, during the past session of Congress. Defeat of the bill prevented mandatory acceptance of assignment for all in-hospital Medicare service and to force the hospital to grant privileges only to physicians accepting assignment, because if they don't they will not be allowed to participate in the Medicare program.

This endeavor by the federation of organized medicine from the economic standpoint means thousands of dollars to the physicians, because we are still free to make the decision to accept or not accept assignment in Medicare. This activity is one of the AMA's many functions for the physicians of this country. At the state level, we are gearing up for the current legislative session. We will be monitoring all the bills relating to health care. I am certain the limited health practitioners will be back to chip away on our traditional diagnosis and treatment of human ailments as defined by the Health Practice Act. The physician assistants, nurse practitioners, nurse midwives, naturopaths, natural healers, reflexologists, iridologists, to name a few. Please rest assured we will be there studying, giving testimony during the hearings, talking to our friends in the legislature about our concerns and, above all, showing our legislature that we hold sacred the quality of health care above cost. However, we will make them understand also that we will cooperate in any cost containment program that does not affect quality of health care.

Our Legislative Committee will try to introduce legislation to obtain some relief from the continuing escalation of malpractice insurance. Our eternal vigil is still going on in the monitoring of how AHCCCS is working, offering advice as needed to rectify past mistakes, and making meaningful and constructive suggestions to the Department of Health, their intermediaries and, of course, the providers, who are the physicians of Arizona.

These are a few of the major endeavors that organized medicine does for the physicians of Arizona. Please help us grow stronger in numbers so we may be able to be more effective—for, in unity, there is strength.

Have a nice day.

Neopito L. Robles, M.D.
President

Cystic Fibrosis

Medical progress certainly has occurred when a disease, previously considered almost exclusively pediatric in nature, becomes a concern as well for internists, gynecologists, and obstetricians. Such is the situation for cystic fibrosis or CF (mucoviscidosis), a disease for which the median age of survival has increased from 12 years in the late 60's to nearly 21 years in 1981. At any given point in time, 20% to 25% of all CF patients are over 21 years of age. In Tucson, 33% of the 75 patients being followed in the CF Center are over 21 years in age, the oldest being 45; in Phoenix, the percent is 22. In addition to the improved prognosis for CF patients, the past decade has provided new insights into the etiology, pathophysiology, clinical manifestations and treatment of the multisystem involvement present in CF. However, the improvement in life expectancy has produced new problems for patients, family members and physicians.

Although the basic genetic defect underlying the exocrine gland dysfunction in CF remains unknown, very recent research suggests that an impairment in chloride (and perhaps sodium) transport across epithelial cells may be the fundamental abnormality. Lack of an adequate animal model has hampered research concerning the basic defect and has necessitated the development of different research approaches. Innovative new studies currently underway in the Pediatric Pulmonary, Adult Endrocrinology, and Dermatology Sections at the Arizona Health Sciences Center are investigating: 1) the feasibility of organ (skin) transplantation from patients to mice, thereby effectively developing a "human model" for CF in an animal; and 2) the role of certain factors — such as epidermal growth factor — on ion fluxes in exocrine glands. Other laboratories are using newer genetic and cell biologic techniques to define the CF gene and its abnormal product.

Historically, the presenting complaints for CF patients have been recurrent respiratory symptoms, diarrhea, and failure to thrive. However, we now know that patients can present at various ages with more unusual problems such as metabolic alkalosis (due to chronic salt loss in sweat), liver cirrhosis, nasal polyps, infertility, appendicitis, and bowel obstruction. The diagnosis of CF shoul be considered in any-aged patient wit appropriate clinical findings; over the past few years three patients over 25 years in age (one 36!) were diagnosed as having CF in Tucson. An early, accurate diagnosis is essential for an autosomal recessive condition such as CF because of the genetic implications and the severity of the disease. There are indications that CF patients are not being recognized early enough in Arizona. Assuming an incidence for CF of 1 in 2000 live Caucasian births and assuming that 70% of patients are diagnosed in the first two years of life (based on national statistics), then we should have already identified 15 new CF patients in the group of Caucasian infants born in 1982 in Arizona (44,000 Caucasian births; 22 expected CF patients). However, only nine patients have been identified by the two CF Centers. Physicians must be aware of the numerous presenting manifestation of CF and order the noninvasive, inexpensive quantitative sweat test. (Such tests should only be done in laboratories doing many sweat tests annually to ensure quality control.)

The increasing age of the patients ha been associated with rising prevalence rates for certain complications including hemoptysis, pneumothoraces liver cirrhosis, nasal polyps, bowel obstruction ("meconium ileus equivalent"), peptic ulcers, cor pulmonale and congestive heart failure cholelithiasis, and painful hypertrophic osteoarthropathy. Psychologic problem have also become much more common. Teenagers and young adults chronically ill with a disease usually atal have major concerns regarding education, career choices, marriage, amily, and the financial aspects of their existence. Infertility (98% of male patients) and decreased fertility (female patients) contribute to the stresses hese patients experience. Adequate birth control must be provided to emale patients in whom pregnancies may be life-threatening.

The treatment for CF patients remains upportive and multifaceted. However, a more aggressive approach to reatment (including longer in-hospital tays) plus better anti-*Pseudomonas aeruginosa* antibiotics have, most likely, been some of the major factors esponsible for the improved prognosis. Care in regional CF Centers, such as hose at the Arizona Health Sciences Center and Phoenix Children's Hospital, has also been associated with better survival statistics. What impact changes in medical care financing (such as DRGs) will have on these improved urvival rates is still unclear, but there are concerns that prolonged, aggressive, in-hospital care may not be as feasible in the future.

In spite of these advances, there is a hocking lack of knowledge regarding CF, the most common lethal, genetic disease affecting Caucasians in Western civilization (CF is less common among blacks). Although a staggering 5% of he general population carries the gene or CF, the heterozygote cannot be detected; nor can a prenatal diagnosis be made by amniocentesis. The neonate cannot be diagnosed by a imple reliable test. The most efficacious treatment has yet to be defined. Thus, we cannot rest on the achievements of the recent past. We must continue to study potential basic defects, evaluate newer forms of reatment (as is currently being done in he Pediatric Pulmonary Section/CF Center at the AHSC), and provide better comprehensive care if CF is ever o become a disease of old age.

Lynn M. Taussig, M.D.
Professor, Pediatrics
Louis J. Kettel, M.D.
Dean
College of Medicine

Has the Machine Become the Physician?

It is said that the scientist is the person who first builds the Brooklyn Bridge and then buys it. Does this observation also describe comtemporary physicians? We, too, have built an impressive medical technology only to find that as we embrace this technology, we lose an irreplaceable part of our profession. The negative side of medical technology — the erosion of the physician-patient relationship must be considered. Medical technology conveys a message to patients that leads to this erosion.

There are indications that the public is increasingly alienated from physicians. A recent poll commissioned by the American Medical Association revealed that 62% of persons in this country are losing faith in physicians.[1] Respondents indicated that physicians are too interested in money and not interested enough in their patients: 60% of those polled said that physicians' fees are excessive and agreed that physicians did not spend enough time with their patients. Almost half said that physicians did not explain things to their patients. A serious breach exists between patients and physicians.

How can the rise of medical technology threaten the physician-patient relationship? After all, diagnostic and therapeutic advances should lead to better patient care and greater patient satisfaction. Cardiovascular mortality is decreasing, infectious diseases have come under medical control, cancer is being cured, measles has been almost eliminated, and smallpox has been totally eradicated. Why is the public's view of the medical care system less favorable than one would expect it to be on the basis of public health statistics? Public opinion is not a public health statistic and does not necessarily respond to such statistics. Public opinion is more important than public health statistics: it determines public health.

What does the impact of CT and PET scanners on the physician-patient relationship have to do with public opinion? I believe that the technological medical armamentarium has a great emotional impact on patients and that the changes brought about by technology are fundamentally altering the way patients relate to physicians. For example, patients may be informed that CT scanning or Swan-Ganz devices are simply the physician's diagnostic tools, but they see a different picture. The diagnosis that seems to issue from the machine is of paramount importance to the patient.

In addition, the economic picture that patients see (often with greater clarity than their physicians) is that Medical technology is expensive. Even though most people never have a CT scan, they are aware that medical technology is causing health care costs to surge upward. In fact, real laboratory costs, including diagnostic procedures, have roughly doubled in the past ten years (Health Care Financing Administration, oral communications, May 2, 1982).[2] Still, I believe that the impact of technology on people and their emotional reaction toward medicine and physicians would be present even if a CT scan cost the same as a game of Pac-Man.

A second picture that patients see is that physicians today are more involved in technology and procedures than in previous years. There is more specialization in practice. For the specialist, the process of correct diagnosis becomes almost an end in itself. In contrast, the patient just wants to feel better. Physicians as a group appear to the public to be less personally involved with their patients.

The message that the patient receives from these two rapidly changing images of the health care program is that of an impersonal, technology-dominated system. The fact that the health care provided in the system may be improved as a result of the technology does not have as much impact as the subtle and hidden message that the machine has become the physician: the definitive advisor. The specialist-physician is metamorphosing into a technocrat and a businessman. The physician retreats behind the machine and becomes an extension of the machine.

Lawrence D. Grouse, M.D., Ph.D.

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2. Tydeman J, Morrison I, Cassidy PA: Analyzing the factors contributing to rising laboratory costs. *Arch Pathol Lab Med* 1983:107:7-12.

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Edward L. DuBrow, M.D., Phoenix, was recently named to the Maricopa County Board of Health.

Drs. Daniel T. Cloud and **John R. Green**, Phoenix, have been reappointed to new terms on *The Western Journal of Medicine's* editorial board.

Timothy R. Harrington, M.D., Phoenix, was program chairman for Current Perspectives III. Discussing "Medical Syndromes in Cerebrovascular Disease" were **Drs. Charles L. Echols, Jr., James L. Frey**, and **Richard A. Thompson**, Phoenix. Guest speakers for the section on "Treatment of Cerebrovascular Disease" were **Drs. L. Philip Carter, J. Michael Powers,** and **Robert Spetzler**, Phoenix.

Paul B. Jarrett, M.D., Phoenix, was one of four outstanding individuals who received Sammy Awards from Samaritan Health Service in February. The Sammy Award is given annually to persons who have made significant contributions to health care in Arizona. Dr. Jarrett, a past president of the Arizona Medical Association, was cited for his long-term commitment to safety. He was one of the first in the nation to recognize the importance of seat belts in cars and was also the first to link the danger of infant crib death to suffocation by plastic bags.

The January "Health Highlights" cable television program focused on Breast Cancer with discussion by **Drs. Lawrence Liebmann, David S. Mendelson, Linda R. Mishlove, Robert Strand** and **Jeffrey Singer.**

The Arizona Medical Association welcomes the following new members.

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Georgetown School of Medicine—1978

Paul B. Jarrett, M.D.

Germit Sandhu, M.D.
Cardiology
2600 East Southern, 1-3, Tempe
University of Birmingham—1969
Rajendra D. Savajiyani, M.D.
Internal Medicine
2525 West Greenway Road, Phoenix
Baoda University Medical School
India—1976
Kenneth Schaefer, M.D.
Internal Medicine
13660 North 94th Drive, No. F-5, Peoria
University of Nebraska—1975
Arthur L. Scherbel, M.D.
Internal Medicine
4525 North 66th Street, Unit 1, Scottsdale
University of Wisconsin—1944
Cameron L. Self, M.D.
Pathology
3537 West Shangri-La Road, Phoenix
University of Iowa—1950
Mark J. Skelley, M.D.
Internal Medicine and Oncology
1500 South Dobson Road, Mesa
University of Iowa—1974
Robert F. Spetzler, M.D.
Neurosurgery
2910 North Third Avenue, Phoenix
Northwestern University, Chicago—1971
Richard B. Stone, M.D.
Emergency Medicine
P. O. Box 1388, Scottsdale
Loyola Medical College—1969
Ruth Tan-Lim, M.D.
Pediatrics
941 South Dobson Road, No. 317, Mesa
University of Singapore—1968
John C. Timmes, M.D.
Obstetrics and Gynecology
1010 East McDowell Road
No. 408, Phoenix
Medical College of Pennsylvania—1976
Salaheddine Tomeh, M.D.
Vascular and General Surgery
224 East Hatcher Road, Phoenix
Damascus University, Syria—1972
Daniel A. Torres, M.D.
Anesthesiology
5060 North 19th Avenue, Phoenix
Seville University, Spain—1958
Joseph R. Volk, M.D.
Internal Medicine and Oncology
5251 West Campbell Avenue, Phoenix
University of Colorado—1977
Steven H. Wiggins, M.D.
Neurology
13460 North 94th Drive, Peoria
Ohio State University—1976

Pima

Armando J. Alfaro, Jr., M.D.
Plastic Surgery
5551 East Hampton Street, No. 3H, Tucson
University of Arizona—1976
Fred E. Brickman, M.D.
Diagnostic Radiology
1040 North Country Club, Tucson
Louisiana State University—1972
Jeryl K. Dansky, M.D.
Pediatrics
529 West Wetmore Road, Tucson
University of Vermont—1980
Hugh J. Gallagher, M.D.
Internal Medicine
3125 East Second, Tucson
University Autonomae
de Guadalajara—1977
William B. Gallagher, M.D.
General Surgery
3891 North Hillwood Circle, Tucson
University of Minnesota—1948
Douglas E. Greer, M.D.
Obstetrics and Gynecology
7840 East Broadway Street
No. 100E, Tucson
University of South Carolina—1974
Herbert R. Jalowsky, M.D.
Family Practice
1701 West St. Mary's Road
No. 137, Tucson
University of Arizona—1979
Stephen Kaskie, M.D.
Family Practice
723 West Orange Tree PLace, Tucson
Universidad Autonoma de
Guadalajara—1976

James J. McCarthy, M.D.
Neurology
2216 North Belvedere, Tucson
University of Illinois—1979
Bruce L. Nelson, M.D.
Internal Medicine
Allergy and Immunology
P. O. Box 12650, Tucson
University of Hawaii—1975
Jack W. Pearson, M.D.
Obstetrics and Gynecology
University of Arizona Health
Sciences Center, Tucson
University of Illinois—1953
Teresa L. Porter, M.D.
Obstetrics and Gynecology
1977 North Francis, Tucson
University of Missouri—1979
Scott A. Rovner, M.D.
Obstetrics and Gynecology
1601 North Tucson Boulevard
Suite 17, Tucson
Universidad Autonoma
de Guadalajara—1975
Kenneth L. Sandock, M.D.
Radiology and Nuclear Medicine
6330 Miramar, Tucson
Indiana University—1968
Danilo H. Sotelo-Garza, M.D.
Orthopedics
712 North Country Club Road, Tucson
Universidad Autonoma
de Guadalajara—1978
Douglas J. Symes, M.D.
Ophthalmology
2445 North First Avenue, Apt. 811, Tucso
University of Michigan—1978
Sheldon Allen Weiner, M.D.
Obstetrics and Gynecology
3730 East Calle Guaymas, Tucson
Wayne State University—1977
Thomas H. Welsh, M.D.
Internal Medicine
5501 Oracle Road, Tucson
University of Arizona—1978
Robert L. Winsky, Jr., M.D.
Psychiatry
5626 East Ft. Lowell, Suite C, Tucson
University of Kansas—1978
Roberto Zamudio-Millan, M.D.
Internal Medicine, Endocrinology
and Metabolism
9420 East Placita La Rana, Tucson
National University, Mexico City—1968

Service Members

Maricopa
Teodorico Rodriguez, M.D.
Family Practice
Veterans Administration Medical Center,
Tucson
University of St. Tomas, Philippines—1961
Thomas F. Schimpf, M.D.
Emergency Medicine
Veterans Administration Medical Center,
Phoenix
New York Medical College—1945
Pima
William G. Barish, M.D.
Family Practice
2819 West Jacinto Street, Tucson
University of Virginia—1981

Associate Members

Maricopa
James J. D'Luzansky, M.D.
Urology
7617 East Minnezona, Scottsdale
Hahnemann University—1954
Philip D. Gelbach, M.D.
Internal Medicine
19615 Conquistador Drive, Sun City West
University of Pennsylvania—1939

Johnson J. Howard, M.D.
Orthopedic Surgery
10418 Bright Angel Circle, Sun City
University of Oregon—1935
Robert G. Smith, Sr. M.D.
General Surgery
9728 Cottonwood Drive, Sun City
Ohio State University—1931

Affiliate Members

Maricopa
Gordon L. Deshler, M.D.
Pediatrics
4526 East Paradise Lane, Phoenix
University of Rochester—1950
Leonard F. Fagnaro, M.D.
General Surgery
12518 Amigo Drive, Sun City
Northwestern University—1950

Resident Members

Maricopa
Nicholas Blavatsky, M.D.
Orthopedic Surgery
Maricopa County Medical Center
University of Nevada—1981
Michael Caskey, M.D.
Surgery
Phoenix Integrated Surgical
Residency Program
niversity of Texas Medical School—1983
Betsy J. Longenecker, M.D.
Family Practice
Good Samaritan Hospital
and Medical Center
University of Kansas—1982

Pima
Helen Sykes, M.D.
Radiology and Oncology
University of Arizona
Health Sciences Center
University of Oregon
Medical School—1981
Julia Szilagyi-Levai, M.D.
Internal Medicine
University of Arizona
Health Sciences Center
Budapest Medical University—1968

Student Members

University of Arizona
Robert Cadoff
Michael P. Dohm
Michael Earl
Bob Johnson
Edward L. Patterson
Margaret A. Pearson
Laura E. Skellchock
John J. Stephens
Trisha A. Wills
John R. Wilson
Duane M. Wooten
Mark D. Wright

Correspondence

Editor—

In the 1983 legislative session a bill was passed and signed into law that drew the attention of both our professions and, at least in the legislative arena, placed us temporarily in opposition to each other. The legislative change in the physical therapy practice act gave physical therapists the autonomy to evaluate and provide treatment to patients without the necessity of referral by a physician, dentist, or podiatrist.

During, and since, this legislative change I have heard of several concerns that some physicians have had regarding the impact this action will have on the delivery of health care. One of the major concerns is that physical therapists, like so many other health care providers of various disciplines of late, are over stepping their bounds, encroaching on the practice of medicine and trying to become physicians through legislation. I would like nothing more than to sit down with each of you, one-to-one, and explain why this just isn't so. Since I obviously cannot do that, let me do the best I can by emphasizing the following points in this monograph.

1. Perhaps the most pertinent question that needs clarification is why physical therapists pursued this action in the first place. The answer is twofold.

First of all physical therapists are ready for this increase in responsibility and autonomy. Our educational and training process has advanced over the last two decades to the point where we can clearly evaluate, implement and alter physical therapy programs independent of physician input if necessary. The training process of most physicians is also markedly devoid of any indepth training in physical therapy procedures and only certain physicians are exposed to our profession, usually not until entrance into residency programs in orthopedic surgery or physical medicine.

The second reason involves the current realities of health care. A greater number of people, for whatever reason, are choosing to receive treatment for their soft tissue problems outside the confines of orthodox medicine. The reasons have reportedly included frustrations with the perceived difficulties of our referral system in getting the patient to the proper specialist, a lack of knowledge regarding physical therapy by both consumer and physicians, the cost of care, etc. The public has ready access to "physical therapy-like" care from chiropractors, naturopaths, athletic trainers, physical educators, health spas, massage therapists, etc. etc. and the list goes on. But until now the public has had limited access to licensed physical therapists, the very specialists with the greatest training to provide this care. Physical therapy is, and should be, orthodox medicine's answer to these quasi health care providers but it is a profession that needs greater visibility, understanding and utilization by both the medical profession and the general public.

2. The question is asked if direct utilization of physical therapy by the public would mean more competition to physicians. Many of you have already experienced an interesting phenomenon as physical therapists are now referring to you, rather than just the one way referral patterns as before. Physical therapists will need to maintain close ties with physicians. Our evaluative skills, although greatly improved, do not allow for indepth diagnostic work-up of serious medical complications. We know the limits of our skills, but also when to trust in the physician's diagnostic, treatment or surgical skills. You will never hear a physical therapist claim the cure of gall bladder or prostrate problems through manipulation of the spine. Again, I emphasize, as the public gains a greater awareness and trust for skills of the physical therapists, physicians will help share the diagnostic and treatment responsibilities when needed.

3. Another concern that needs addressing is the perceived fear that this step by physical therapists is just the first step of a long-term plan to become "physicians through legislation." This fear is also unfounded. We will not now, nor at any time represent ourselves as physicians. We are not interested in expansive moves into the realms of medicine, but are only interested in refining the tools and skills of the physical therapy profession.

In fact, we have a greater problem with others who would use the long-held skills of physical therapy in their own professions. Physicians are sometimes included in this group through the practice of allowing their untrained aides or nurses to provide physical therapy modalities in their office and claim to be providing physical therapy. Another practice that greatly concerns us is the hiring of physical therapists to work in the physician's office where a motive of profit is involved. The American Physical Therapy Association is firmly opposed to situations in which referring practitioners may profit from his or her referral. The ethical ramifications are obvious.

No, we are not interested in expansive moves into the medical profession, but would ask physicians to certainly consider their own actions as well towards the occasional improper use of physical therapy.

In conclusion, I simply call for greater communication, and through communication greater understanding between our two professions. We have differences but certainly have much more in common. I am also convinced that greater communication will lead to what differences we may have being worked out far easier and to the betterment of both our professions and the public, than if worked out in the legislative arena.

I would also like to thank the physicians of Arizona for the great support they have shown the physical therapy profession over its formative years. Perhaps we can now work even closer together and, as physical therapists, begin to return the favor.

Blair J. Packard, P.T.
President
Arizona Physical Therapy
Association, Inc.

CONFLICTS in Medicine

WHO SAID COMPETITION WILL BE BAD FOR BUSINESS?
CHIROPRACTOR SAYS KIDS WITH DIABETES DON'T NEED INSULIN
BERT WHITMAN

Library Talk

3iomedical Books: ligh Prices, High 'roduction, and Low Quality

ertha Almagro

"The enormous price of books is an vil calling loudly for redress; it is a ubject too interesting to the literary ommunity to be longer neglected." his complaint was voiced 180 years ago n an article published in *"Medical and hysical Journal,"* in 1803, and signed y a Dr. John Wilson. Dr. Wilson, who vidently was a country physician ccording to the information gleaned rom the article, condemned the ractice of publishing every book in hat he called "a splendid style." He onsidered this a serious obstacle to the iffusion of knowledge, and questioned it was the result of "vanity in the uthor or folly in the public." Even hough he admitted that the high price f books was due in part to the heavy luties imposed on paper, he opposed he "extraneous and expensive mbellishments" lavished on their roduction, which precluded the "poor n pocket" from attaining their ossession, with damaging results to the cientific advancement of the individual. hese comments have prompted me to dapt the lines from a popular song to onvey the present state of medical ook publishing. They go: Holy cow . . . Dr. Wilson could see the publishing ndustry now!

Biomedical books represent the argest single segment of the professional book market. The 28th edition of the *Bowker Annual of Library and Book Trade Information* reports 5,178 titles in this category, representing ten percent of all books published. The acquisition of publishing houses by large conglomerates has switched the emphasis from quality to quantity, placing an added burden on the already difficult task of book selection. With limited budgets, how can a library deal with the large number of biomedical books being published? How can the best contributions be identified from the plethora of books dealing with the same subject that are coming out simultaneously from the presses of these publishers?

When prices of books continue to advance annually at a rate far in excess of the Consumer Price Index, it is time to take drastic measures. Unfortunately price increases do not guarantee better quality in production, and only a few qualify to be included in the "splendid style" mentioned by Dr. Wilson. In fact, the workmanship has deteriorated, and many books suffer from early symptoms of disintegration with loose spines and pages falling out. According to the figures cited in the *Bowker Annual*, the present biomedical books average $38.71.

Majors Scientific Books, Inc., publishes twice a year a summary of new books arranged by publisher and subject, indicating number of titles, percentage of total, and average price list. The information listed below was taken from these reports:

Libraries cannot afford to purchase all titles; therefore decisions must be made taking into consideration a number of factors. Librarians must look to the subject area strengths of their own institutions, pay close attention to book reviews, evaluate the intrinsic worth of each book, solicit input from faculty members with expertise in the specific subject, and rely heavily on resource sharing. Interlibrary loan has become a necessary way of life for research activities at the university level.

I feel sure that had Dr. Wilson witnessed the present state of affairs in the area of biomedical publications, he would have written another article to chastise the existing emphasis on sales and growth, in which big business has supplanted the creative function of the industry.

Publisher	No. of Titles	% of Total	Average Price
Academic Press	68	4.6	$ 44.48
Butterworth	26	1.8	70.42
Dekker	17	1.2	67.97
Elsevier	108	7.3	74.25
Pergamon	6	.4	72.50
Plenum	68	4.6	60.33
Springer-Verlag	65	4.4	59.43
Thieme Stratton	15	1.0	31.05
Wiley	45	3.0	38.78
Williams & Wilkins	38	2.6	43.81
Subject	**No. of Titles**	**% of Total**	**Average Price**
Anatomy	22	1.5	56.21
Biochemistry	27	1.8	60.16
Cardiovascular System	40	2.7	40.10
Dermatology	16	1.0	50.23
Drug Abuse	4	.3	22.49
Geriatrics	3	.2	35.33
Ophthalmology	26	1.8	50.90
Orthopedics	24	1.6	60.18
Pediatrics	32	2.2	56.65
Surgery	61	4.1	63.15

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rom: Assistant Librarian for Processing ervices, University of Arizona Health ciences Library, Tucson, Arizona 85724

Medical History

Extracts from the Publications of the Arizona Medical Association

(Continued)

John W. Kennedy, M.D.

We continue highlighting the history from the publications of the Arizona Medical Association, and in the eighth installment begin with the year 1933.

News Items 1933

Officers of the Maricopa County Medical Society were President, A. M. Tuthill; Vice President, F. C. Jordan; Secretary-Treasurer, Oscar W. Thoeny; Censor, S. I. Bloomhardt and Directors included, J. J. McLoone and H. D. Ketcherside.

The Arizona Public Health Association met in Tucson with the state medical society. Among the speakers were Dr. Vivian Tappan of the Desert Sanatorium in Tucson speaking on the early diagnosis of poliomyelitis.

The retiring president of the staff of Good Samaritan Hospital spoke about "Two of the most serious criticisms of the service are surgery and unnecessary operations performed, and poor work done because of inexperience, lack of judgment or lack of ability." "The radiology reports are not always infallible and if not supported by clinical signs they should be disregarded." (*I bet he was popular after that blast*).

Harry T. Southworth, M.D.—1876-1933

Dr. Southworth located in Prescott in 1903, was a charter member and president of the Yavapai County Society. He was also president of the Arizona Medical Association, was one time city health officer of Prescott, a charter member of the Arizona Public Health Association, and a fellow of the American College of Surgeons. Dr. Southworth served for two years on active duty in World War I.

Staff Meetings

Dr. F. C. Jordan speaking at a staff meeting of the Good Samaritan Hospital, Phoenix gave a resume of obstetrics for the year of 1931-1932. Spontaneous deliveries, 370; Cephalic presentation, 352; Breech presentation, 18; Forceps, 61; Caesarean section, 16; Monstrosities, 3; Stillborn, 16; Died within an hour after delivery, 6. Three maternal deaths, one from epilepsy, one aclampsia toxemia and one rupture of the lower uterine segment.

Legislation and Resolutions

The Arizona Medical Association passed a resolution in 1933 against the Veteran's Hospital plan. It was stated that execution of the World War's Veteran Act of 1924 extending to nonservice connected disabilities would mean: 1) 120,000 new beds; 2) Class legislation; 3) Opposed to any further construction of Federal Hospitals; 4) No pensions for nonservice connected disabilities. A copy of the resolution was to be sent to all members of Congress and to the Veteran's Bureau, etc. (*The bureaucracy prevailed*).

A resolution was proposed for all medical societies to petition the American Medical Association to decrease the number of medical graduates. This was because of the surplus of doctors and their low income. (*$2000.00 was stated to have been the average doctors' income in those depression days!*)

Also 1933 was an important year for medical legislation in Arizona. A constitutional initiative to give chiropractors the legal right to practice medicine and surgery as a constitutional provision was defeated. Dr. O. H. Brown, chairman of the Maricopa County Society Welfare Committee headed the fight.

The eleventh Arizona Legislature passed the basic science bill, a new Medical Practice Act. A bill codifying the Public Health Laws failed.

Dr. R. F. Palmer, medical referee for the State Industrial Commission spoke about the relationship of the Commission to the medical profession. He reviewed some of the history of the Commission, denied that all cases go to a few selected surgeons and discussed the fee schedule.

Dr. Clarence Gunter of Globe, the retiring president, spoke about the fact that the depression was biting into the income of all physicians, that the attempt to abolish the State Compensation Law had been defeated, the basic science law had been passed and the Chiropractic Medical and Surgical Bill had been defeated. He thought that was a good record. A good deal of credit for the passage of the Basic Science Law was awarded to the Women's Auxiliary and the the committee on Public Welfare. The heavy work fell on Dr. J. D. Hamer of Phoenix.

Reports and Papers

Mrs. J. C. Wilson of Wilcox made the first report of the Women's Auxiliary of the Arizona Medical Society, to be printed in the official organ of the society, namely, *Southwestern Medicine*. Mrs. C. R. Swackhammer Superior was president, Mrs. J. M. Greer of Phoenix, president-elect, a Mrs. Oscar Thoeny of Phoenix was t corresponding secretary.

The three Flinns, John W., Robert and Zebud M. physicians of Prescot father and sons, did a paper on the treatment of bone and joint tuberculosis that year.

Dr. J. C. Hancock of the San Carlo Arizona Indian Reservation writing about "Disease among Indians" liste tuberculosis, trachoma, and syphilis that order of frequency.

John W. Thomas, M.D.—1857-1933

John Wicks Thomas, M.D., 1857-19 an early pioneer physician of Phoeni died. He was graduated from the Chicago Homeopathic Medical Scho in 1891, came to Phoenix in 1898. A son, Roy Thomas, was a physician in San Francisco and his son-in-law Warner Watkins, was a physician in Phoenix.

Historical Sketches

There was a short historical sketch the origin and present status of the Southwestern Medical and Surgical Association. It was organized in 1913, and the meeting places and officers who have served in that interval were given.

There was a description of the Federal Emergency Relief Administration regarding relationship private physicians, and a partial recap of an American Medical Association editorial which gave the rules for stat relief agencies to follow in providing this medical care. This was, as the nar implies, part of the effort of the Roosevelt administration to ameliorat the effects of the depression.

News Items 1934

Dr. Fred Holmes was ill with a recurrence of tuberculosis. Dr. Louis Baldwin of Phoenix had moved to Tucson to be associated with the Dese Sanatorium. Dr. Baldwin was one of th initial group in the Grunow Clinic Building. Dr. W. P. Sherrill had moved to the Professional Building and Dr. Frank Malloy spent the summer on th coast.

The Arizona Medical Association appropriated $200.00 to be used to he the American Medical Association delegate to defray expenses. The delegate was Dr. Jess E. Hamer of Phoenix. (*That wouldn't even do an introductory party for an AMA presidential candidate these days.*)

Committee on Economic Security

A resume of President Roosevelt's committee on Economic Security was published. A Professor Edwin E. Wittee was the executive secretary and the firs report of this committee was due in December 1934. It was to study the onomic aspects of the problems of edical care for people in low income oups. It was expected that at the arings the American Medical sociation would oppose sickness urance. (*The AMA established its putation for opposing everything very rly.*)

dustrial Commission

Mr. L. Leo Guynn, claims manager for e Industrial Commission addressed e state medical meeting. (*You have to ruse this in its entirety to see some of e ridiculous fee claims made by spitals and physicians.*) Dr. Guynn d down these "don'ts" for doctors. "When examining for permanent sability don't try to take into account s occupation. Don't advise the imant on the compensability in his se. Don't treat a patient previously der the care of another physician thout authority from the mmission. Don't fail to read the dustrial Fee Schedule. Don't fail to ite and give us the very devil, when e have it coming!" (*The names ange but the problems remain the me.*)

At the 43rd annual meeting, R. L. lmer, Medical Advisor to the dustrial Commission, reported to the ganization and made it plain that he vas an employee of the Commission d bound to their policies." He quested that a conference committee e appointed to the Industrial ommission. Dr. Watkins said a evious conference committee refused function, when asked by the dustrial Commission to help in ensoring certain medical practices, and e committee went out of existence. e thought that was a short-sighted olicy.

oming of Age and Increasing rculation

The Medical and Surgical Association the Southwest came of age. It was ganized in 1913 by physicians of rizona, New Mexico and Southwest exas using as a nucleus the embership of the Railway Surgeons ssociation of the Southwest centered ound El Paso, the medical center for e district.

Arizona, New Mexico , and Texas est of the Pecos, had 1200 doctors and ne million inhabitants. In Sonora and hihuahua on the border in Old lexico there were 200 physicians and 50,000 inhabitants. Just south lay noloa, Durango and Cohuihua with 00 doctors and one and one-half illion inhabitants. It was noted that ach of these 1800 doctors were eceiving this particular issue of *outhwest Medicine* in order to ncourage their membership in the rganization.

Scientific Papers

Warner Watkins, M.D., of Phoenix, wrote an article on "The Treatment of Inflammation by X-ray." As usual he had a great bibliography on the subject, 223 references. This gives some idea of the widespread use of X-ray for that purpose during that era. He mentioned carbuncles, tuberculous glands, hyperthyroidism, mastoiditis, and sinusitis among those inflammatory conditions for which radiation may be prescribed, had been prescribed, or could be prescribed.

Dr. C. A. Thomas, S. C. Davis, and R. H. Wilson of Tucson Thomas-Davis Clinic in a comprehensive paper discussed "Collapse Therapy in Pulmonary Tuberculosis."

Dr. Howell Randolph of Phoenix commented on "The Pneumothorax Treatment of Acute Lobar Pneumonia." And reported on its use in eighteen cases.

A report of the Medical Defense Committee of the Arizona Medical Association indicated, "It would appear that Arizona has been freer of malpractice cases than any other state. This is attributed to the vigorous manner in which the association defended cases. Lawyers didn't wish to take cases. In previous cases tried, the verdict was always for the physician defendant." (*In those days they didn't fool around*).

Dr. L. M. Smith of El Paso, Texas reported on a fatal case of coccidioidal granuloma and stated, "During the past two years several cases of coccidioidal granuloma have been recognized in the El Paso community."

You have only to peruse the titles of papers published to get some idea of the major medical problems. Dr. Victor Randolph of Phoenix wrote on, "Intrapleural Pneumolysis, an Aid to Restoring Function in the Tuberculous Lung."

In his presidential address, Dr. Meade Clyne of Tucson brought to mind some of the current problems. "Today the tendency of social workers . . . is to expect that our County Hospitals, supported by taxation, intended to give service to the poor, shall also give service for people abundantly able to pay." "Great care should be exercised by doctors in aiding the establishment of a free clinic of any kind." He went on to mention that, "During the past year the Industrial Commission has cut from three-fourths to one-half, in some instances, the fees for services rendered by doctors to injured employees coming under its jurisdiction." (*The continued joust between the commission and the profession*).

Prince Albert Melick - 1870-1934

The death of Dr. Prince Albert Melick of Williams, Arizona was announced. Dr. Melick was licensed in Arizona in 1903 and was a charter member of Coconino Medical Society and a long time respected pioneer physician of Williams, Arizona.

Dr. W. R. Jameson mentions some of the don'ts and one of them was "Don't pass instruments through the urethra until you have tried it once on yourself." (*This indeed would have a salutary effect on some of our surgical colleagues. In my day all X-ray residents had to undergo all of the special procedures for which they were trained. Fortunately there weren't too many procedures in those days*).

Some more "don'ts" by Dr. W. R. Jameson of El Paso, Texas. "Don't promise your gonorrheal patient he will be cured in a certain length of time. The crowned head and the dead head suffer equally. Don't treat the sexual neurothenic as a nuisance. His troubles are very real and he usually has the means to pay for your advice."

News Items 1935

A post convention trip announcement read: "Twenty dollars for a round trip from Nogales to Guymas, Sonora for an eleven day fishing trip." Then an overnight trip back to Nogales, all of this by rail of course. It was to be hosted by the Santa Cruz County Medical Society after the state meeting.

A Trachoma Institute directed by Dr. Polk Richards of the U.S. Indian Service at Fort Apache Agency was held on October 4 to 11, 1935. Trachoma at that time was a leading, or one of the leading diseases afflicting the Indians. The U.S. Indian Service maintained an all trachoma school for 275 children at Fort Apache with an 18 bed hospital run in connection with the school. This gives some idea of the magnitude of the problem. (*Information now is the Phoenix Indian Medical Service has no new cases. Sic Transit Gloria*).

E. Payne Palmer, M.D. of Phoenix proposed to the American College of Surgeons that the College sponsor first aid stations at points where accidents commonly occur. He had in mind cities and highways, especially remote places on the highway where first aid was seldom available for automobile accident victims. This had first been proposed at a sectional meeting of the College of Surgeons in Prescott. At first the Red Cross wasn't interested in this project but they eventually did take it up and for quite some time these aid stations were and some still are in existence.

The great debate over socialized medicine raged. On November 12, 1935 at 2:00 p.m. E.S.T. there was a national broadcast with the affirmative carried on by a W. T. Foster and the negative by Dr. R. C. Leland and Dr. Maurice Fishbein.

The Arizona Medical Association was scheduled to meet in Nogales. Recalling the "cock fight" at a previous meeting years ago, members were warned to get their money ready for the many interesting special events planned. It was stated that Dr. Jesse D. Hamer, president-elect of Phoenix had planned the "biggest meeting in the history of the association."

The Industrial Relations Committee of the Arizona Medical Association met the first Sunday of each month to advise of disability and physicians fees and consisted of seven M.D. members to consult with the Industrial Commission. (*This helped iron out a lot of problems*).

Personals

By this time Watkins and Brown, the editors of *Southwest Medicine* really had something going so far as obtaining personals were concerned. For instance these are a few that occurred in the Fall of 1935, Dr. Robert Flynn of Phoenix went to Europe. Drs. H. P. Mills, Winn Wiley, George Goodrich and Charles Sult all went to the coast during the summer. Dr. George Truman was appointed State Health Superintendent and was at Fort Tuthill with the National Guard. Dr. Joseph Madison Greer was on the Phoenix Aviation Committee and flew to Detroit on aviation business. (*He told me he made flights in those days simply by following the highways and the railroads*).

The first U.S. Narcotic Farm was dedicated at Lexington, Kentucky and opened May 25, 1935 and by June of 1935, there were 280 addicts from the federal penal system. The capacity was 1000 beds and a second farm was to be opened in Fort Worth, Texas also under the management of the U.S. Public Health Service.

It was announced that Dr. C. B. Warrenburg has located in the Grunow Memorial Building to practice obstetrics.

Dr. R. W. Hussong, who completed an internship at St. Joseph's Hospital in 1934, was appointed city physician as he had specialized in public health and would be full-time. It was reported that Dr. Joseph Bank, assistant professor of gastroenterology at the University of Pennsylvania, had opened an office to practice in Phoenix.

Drs. Floyd Sharp and Preston Brown now are associated in practice of Obstetrics/Gynecology in the Professional Building. Dr. Sharp was formerly in the Grunow Clinic Building.

It was noted that the infamous goat gland Brinkly of Kansas finally lost his Kansas Medical license. (*As I recall he simply moved his radio station and goat gland clinic below the border and continued*).

Tuberculosis was still a great subject for dissertation and "Curability of Tuberculosis of the Bowel" by Drs. S. H. Watson and W. R. Hewitt of Tucson was published. It was stated that "formerly pulmonary tuberculosis was thought to be incurable and now bowel tuberculosis comes under the same category simply because it was not recognized until it is far advanced." They advised artificial light therapy with diet and rest. The quartz vapor light was thought to be the best and the disease should be treated early.

Phoenix EENT

The charter members of the Phoenix EENT division of the Maricopa County Medical Society were listed as follows: H. T. Bailey, Edwin Baker, D. E. Brinkerhoff, Lon Browning, H. L. Franklin, Duke R. Gaskins, D. F. Harbridge, B. L. Melton, H. E. Moss, R. L. Rees, Mayo Robb, William Schwartz, James L. Johnson, and Harley Yandell. It was the purpose of this division to conduct their own scientific meetings during the meetings of the Maricopa County Medical Society and there was quite an array of people engaged in that specialty then.

Mottled Enamel

In an editorial on "The Fluorine Menace" it was mentioned that there are sections of Arizona where children acquire Mottled Enamel due to the high fluorine content of the water. Dr. Margaret Commack Smith of the University of Arizona Nutrition Department established this. (*There was a time when you could almost predict where an individual was born and spent his early formative years, if a native of Arizona and if he/she had mottled enamel. The first nationwide studies on this was conducted by the U.S. Public Health Service and as is generally known there are other Southwest areas notably in Oklahoma and Texas in which mottled enamel is endemic.*)

Papers

A paper was published on the use of artificial pneumothorax in the treatment of pneumonia by J. C. Riggins, M.D. of Tucson. This procedure was first introduced by a German physician Freidman in 1921 and Holmes and Randolph of Phoenix had previously reported 18 cases treated. This was said to reduce pain, relieve toxicity and only a small amount of air was needed, 300 cc. every two or three days. He stated that this should be given early in the disease and it may relieve cyanosis and it also helped to relieve the painful pleuritic pain.

The Flinn combination John W., Robert S. and Zebud M. of Prescott came forth again with another paper and this time on Bronchomonoliasis, a uncommon disease at that time.

Appointments

Dr. A. M. Tuthill, a Major General and Commander of the National Guar Troops of Colorado, Arizona, New Mexico, and Oklahoma was appointed Chief Umpire for maneuvers of Reserv Officers encamped just west of Tucson

Dr. James R. Moore had been reappointed superintendent of the Arizona State Hospital for Governor Moeur for 1935-1936.

Dr. Joseph Madison Greer of Phoen was head of the program committee t dedicate Sky Harbor Airport, recently acquired. This occurred on Armistice Day November 11, 1935.

Bad Health and Good Health

Dr. Toler R. White of Kingman, secretary of the County Board of Healt had quarantined schools in Kingman and Oatman due to scarlet fever and measles epidemics.

In 1935 there was a comprehensive public health survey for syphilis and gonorrhea by sex, race and location in New Mexico prepared by Drs. Exner and Clark. Nothing like it had ever happened in Arizona in that time. In fact Arizona was dilatory in its public health measures principally because th State Legislature wouldn't appropriate the money.

Legislation

An extra session of the AMA House of Delegates met February 15, 1935 to consider the new proposed national health legislation called the "Wagoner Bill." But while the doctors were complaining about the provisions of this bill they were already receiving some provisions of this bill providing that each state matched the federal funds and they further believed that this would break the States. (*Apparent one result of all of this and subsequen Federal Aid they did not anticipate— that the states would have to continue the programs when the Feds pulled out*).

There was an editorial on "A Proposed Health Insurance Law." The American Association for Social Servic prepared a draft of a model State Health Insurance Bill which covered thirty pages. The benefits proposed would have been complete coverage.

The Legislative climate of the times was certainly different. Senator Hayden introduced a senate bill providing for persecution of persons sending obscene matter through the mail, including contraceptive literature and supplies. The editor complained that "The Rhythm" a booklet on the sterile and fertile period for women passes in the mail unmolested!

The National Compulsory Health Insurance Bill introduced into the New York Legislature, I guess as "a trial."

ommittee Work

Each year there was a good report of e Industrial Relations Committee of e Arizona Medical Association. This mmittee had been formed as rected by the 1934 Arizona Medical sociation Delegates and the mmittee's general purpose was: 1) To present organized medicine with the dustrial Commission. 2) To promote d elevate industrial surgery. 3) To aluate professional fees, working with e commission and to seek further gislations so that all employees and nployers will have coverage. It was oted that many workers are not now overed and there is no penalty if the nployer does not insure or has complete coverage.

Dr. Franklin Martin, founder of the merican College of Surgeons and a edical leader nationwide, died.

And the editor made another plea for ews, "Its value is not so much for the resent day as it is for historical work." *Vould that every editor read that and elieved it and promoted it.)*

Secretary of Labor, Francis Perkins ad appointed a federal committee to udy the medical needs of low income milies. (*This was part of the continued rive of the new administration for ational Health Insurance. No one now nderstands why they didn't pursue it ore avidly because they probably ould have pushed it through at that me.)*

Vatkins Retires

Warner Watkins retired as editor of *outhwest Medicine* and Orville Harry rown, M.D. was now the senior editor. le made a plea for the continued ubmission of medical papers by the nembership and news items. Here are ome of the news items that did ppear: Norman Ross was appointed County Physician for Maricopa County. Carlos Craig was now in private practice as his term as County Physician had expired. Trevor G. Browne, M.D. was appearing in a Little Theater production. Archie Cruthirds of Bisbee was spending part time in the office of Dr. J. J. McLoone, whose health was not good.

And the editor made another plea for news, "Its value is not so much for the present day as it is for historical work."

It was noted that the doctors were not averse to Federal Relief. The physicians in Pennsylvania alone had been paid one and one-half million dollars in a year on the Federal Relied Medical Program. Ten thousand physicians nationwide had participated, but the profession was against all free care for the indigent. (*It just depends on whose barn is burning down.*)

The first part of Orville Harry Brown's proposed "Medical Annals of Arizona" appeared this year and also a reprint of "The Apache Pass Fight," an account by Dr. Irwin. This is a reprint of an account from the Infantry Journal by General Irwin and is one of the few occasions in which a medical officer was awarded a medal of honor in the State of Arizona. The other one was to Leonard Wood during the Geronimo Campaign.

Dr. C. A. Donaldson of Tucson and Dr. L. J. Regan of Tucson are members of the County Health Clinics of Pima County.

It was announced that Dr. B. Herzberg of Phoenix married Miss Dorothy Cline of Los Angeles. (*Nothing escaped the eye of the editor in those days.*)

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

RETIREMENT PROGRAM COMMITTEE

The Retirement Program Committee of Arizona Medical Association, Inc., met Thursday, December 15, 1983.

PLan Administration Proposals

Mr. Gaines, on behalf of Valley National Bank, and Messrs. Niewold and Steuk, on behalf of First Interstate Bank, made general presentations to the members regarding past experience in the pension/profit sharing fields of the respective banks, their investment policies, and the services which could be provided to the Association.

Following the presentations, the committee, with input from both Mr. Tellier and Mr. Pingree, discussed at great length the content of both, the needs of ArMA as they relate to funding of the employee pension plan, as well as the basic format to be followed to accomplish the transfer of funds from Cal-Western and the continued participation by Mr. Robinson in his administrative capacity and by the committee as a whole.

The committee then made the following determinations:

1. That Mr. Pingree proceed immediately to request the transfer of funds from Cal-Western and to prepare such legal documentation necessary to accomplish such transfer.
2. That, because there was little differentiation between the capabilities of both banks and because of the already existing working relationship which is established between ArMA and Valley National Bank in other areas, Valley National Bank be selected to receive the funds from Cal-Western and commence administration of the employee pension plan.
3. That Mr. Tellier immediately draft documentation outlining the needs and objectives of the Association relating to its employee pension plan, as well as guidelines for investment of plan funds by the Valley National Bank, which documentation would be reviewed and finalized by Mr. Tellier, Mr. Pingree and Mr. Robinson.
4. That the committee would meet again in several months to review the plan under its new administration and at that time determine whether to continue with the committee in an advisory capacity or to recommend it be disbanded.

AM Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
 Lung Association
Walter O. Boswell Memorial Hospital,
 Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
 of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program,
 (THMEP) Tucson
University of Arizona College of Medicine,
 Tucson
Veterans Administration Medical
 Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award

FEBRUARY

Eleventh Annual Barrow Neurological Symposium—Stroke
February 13-15. La Posada Resort Hotel, Scottsdale. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., 222 West Thomas Road, Suite 415, Phoenix, Arizona 85013. Approved for hour per hour Category 1 credit.

Inaugural Seminar of the American Association of Orthopaedic Medicine Medical Approaches to the Low Back
February 15-19. La Posada Resort, Phoenix. Sponsor: Maricopa Medical Center Department of Anesthesiology. Contact: Kent Pomeroy, M.D., Secretary-Treasurer, American Association of Orthopaedic Medicine. Approved for 28 hours of Category 1 credit.

1984 CME CRUISE/CONFERENCES ON LEGAL—MEDICAL ISSUES

Caribbean, Mexican, Hawaiian, Alaskan, Mediterranean. 7—14 days in winter, spring & summer. Approved for 18—24 CME Category 1 credits. (AMA/PRA). Distinguished professors. **Fly roundtrip free on Caribbean, Mexican, & Alaskan cruises.** Excellent group fares on finest ships. Registration limited. Pre-scheduled in compliance with present IRS requirements.

Information:
International Conferences
189 Lodge Avenue, Huntington Station,
N.Y. 11746 (516) 549-0869.

Frontiers in Ophthalmology
February 16-18. Mountain Shadows Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Medical Center, 525 N. 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

Seventeenth Annual Southwestern Clinical Pharmacy Seminar: Therapeutic Drug Monitoring
February 17-19. Ramada Inn, Tucson. Sponsor: U. of A. College of Pharmacy. Contact: Jack R. Arndt, Ph.D., College of Pharmacy, U. of A. Health Sciences Center, Tucson, Arizona 85721. 9 hours of Category 1 credit applied for.

Trauma Care '84 — National Symposium on Trauma
February 20-22. Metrocenter Holidome. Sponsors: John C. Lincoln Hospital & Health Center, University of Arizona College of Medicine, LIST, EMC, & AEMS. Contact: Elaine Nairn, Symposium Secretary, c/o John C. Lincoln Hospital & Health Center, 9211 North Second Street Phoenix, Arizona 85020. Physicians approved for 16.5 hours of Category 1 credit, nurses 19.8 CEUs.

26th Annual Meeting South Central Association of Blood Banks
February 19-22. Albuquerque Regent and Convention Center, New Mexico. Sponsor: South Central Association of Blood Banks. Contact: Linnelle Wilson, Executive Director, South Central Association of Blood Banks, P.O. Box 4679, Austin, Texas 78765. Approved for 28 hours of Category 1 credit.

Advances in Obstetrics and Gynecology
February 22-24. Scottsdale Hilton. Sponsor: Maricopa Medical Center: Contact: John V. Kelly, M.D., Department of OB/GYN, Maricopa Medical Center, 2601 E. Roosevelt, Phoenix, Arizona 85008. Approved for hour per hour Category 1 credit.

Anesthesia for the 80's — 10th Annual Meeting
February 24-26. Scottsdale Hilton, Scottsdale. Sponsor: Arizona Society of Anesthesiologists and Department of Anesthesiology. Contact: Beverly Richter, Arizona Society of Anesthesiologists, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 15 hours of Category 1 credit.

Emergency Care Update VI
February 27-29. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. Colleg of Medicine. Contact: Office of Continuin Medical Education, University of Arizona Health Sciences Center, Tucson, Arizona 85724. Approved for 23 hours of Category 1 credit.

Southwestern Seminar on Recent Advanc In Neurology and Neurosurgery
February 29-March 3. Sheraton El Conquistador, Tucson. Sponsor: Universit of Arizona Health Sciences Center. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Cente Tucson, Arizona 85724. Approved for 13.5 hours of Category 1 credit.

MARCH

5th Annual Sports Medicine Symposium Olympic Medicine
March 8-10. Marriott Hotel, Tucson. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona. Approved for 19.5 hours of Category 1 credit.

"Focus 84" Respiratory Muscle Function and Physiology
March 8-10. Registry Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner St. Luke's Medical Center, 525 N. 18th Street. Phoenix, Arizona. Approved for hour per hour Category 1 credit.

Training in Structural Family Therapy
March 8-12. Arizona Family Learning and Communication Center. Sponsor: Philadelphia Child Guidance Clinics. Contact: Arizona Family Learning and Communication Center, Metro Medical Plaza B-403, 3201 West Peoria, Phoenix, Arizona 85029.

FAR WESTERN MEDICAL ASSOCIATION
March 3—17, 1984
Cortina, Italy (first week)
Theme: "Medicine in Europe Today"
Approved for hour per hour Category credit

Please write to:
Far Western Medical Association
P.O. Box 3817
Van Nuys, California 91407
for detailed information

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- Massachusetts General Hospital
- University of California — San Francisco
- University of London
- Barrow Neurological Institute
- University of Texas
- Henry Ford Hospital
- University of Western Ontario

. . . plus nursing instructors, specialists from Loyola University (Chicago), St. Margaret Hospital, University of Mississippi — for special nursing sections.

Last Call: Registration for 11th Annual BNI Symposium:

STROKE

Prevention . . . Diagnosis . . . Evaluation . . .
Management . . . Surgery . . . Nursing Care . . .
Rehabilitation . . . Research

Feb. 13 — 15
La Posada Resort Scottsdale

Sponsored by the Barrow Neurological Institute of St. Joseph's Hospital and Medical Center — Phoenix

Accreditation:
15 hours Category I credit toward AMA Council of Continuing Education's Physician Recognition Award. 18.5 total Contact Hours, Arizona State Nurses Association.

For Further Information:
Call Richard A. Thompson MD, BNI Symposium Chairman . . .
277-2657

The David C.H. Sun, M.D. Memorial Institute
and the
College of Medicine, University of Arizona
present

Gastroenterology for Clinicians

March 21-23, 1984 Scottsdale Hilton Scottsdale, Arizona

Co-Chairmen: **Fenton Schaffner, M.D.** New York, New York; **David L. Earnest, M.D.** Tucson, Arizona

Learning in the Sun
This symposium highlights the most recent diagnoses and treatments for digestive disorders, with attention to new approaches for patient management problems. A distinguished faculty will relate these new concepts to clinical practice in the area of gastrointestinal bleeding, peptic ulcer, inflammatory bowel disease, hepatobiliary and pancreatic diseases. Participants are invited to bring their own case studies for discussion and open dialogue with visiting professors.

A.M.A. Category I and American Academy of Family Physicians Credit -16½ Hours.

For information contact: Mrs. David C.H. Sun
David C.H. Sun Memorial Institute
4129 E. Sandy Mountain Road
Scottsdale, Arizona 85253
(602) 948-1064

Tenth Anniversary Winter Update: 1974-1984
March 16-18. Tucson Marriott Hotel, Tucson. Sponsor: University of Arizona College of Medicine, Arizona State Assn. of Physician Assistants. Contact: Susan Stumpf, PA-C, 630 N. La Cholla Blvd., Tucson, Arizona 85745. Approved for 18 hours of Category 1 credit.

Tenth Annual Maricopa Medical Center Urological Seminar
March 17-18. The Cottonwoods, Scottsdale. Sponsor: Maricopa Medical Center. Contact: James H. McDonald, M.D., Chief of Urology Service, 2601 East Roosevelt, Street, Phoenix, Arizona 85008 or Wilfred M. Potter, M.D., Scottsdale Urology Associates, Ltd., 3604 Wells Fargo, Suite B, Scottsdale, Arizona 85251. Approved for 14 hours of Category 1 credit.

Clinical Seminar Series
What's New in the Approach to Anemia
March 17, 1984. University of Arizona Health Sciences Center. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724.

Skeletal Radiology — 1984
March 17-22. The Pointe. Sponsor: Department of Diagnostic Radiology Allegheny General Hospital, Allegheny Health, Education and Research Corporation and Allegheny Radiology Associates, Ltd. Contact: Continuing Education Services, Allegheny General Hospital, 320 East North Avenue, Pittsburgh, PA 15212-9986. Approved for 20 hours of Category 1 credit.

Seventh Annual Pediatric Update
March 20—23. Red Lion's LaPosada Hotel, Scottsdale, Arizona. Sponsor: Phoenix Children's Hospital. Contact: Ronald A. Christensen, M.D., Phoenix Children's Hospital, 1117 East Willetta Street, Phoenix, AZ 85006. Approved for 16 hours of Category 1 credit.

Current Perspectives Seminar—Diabetes
March 21. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85724. Approved for 3½ hours of Category 1 credit.

Gastroenterology of Clinicians 1984
March 21-23. Scottsdale Hilton. Sponsor: University of Arizona College of Medicine and David C. H. Sun Memorial Institute. Contact: Jeanie Sun, 948-1064.

20th Annual Arizona Chest Symposium
March 29-31. Doubletree Hotel, Tucson. Sponsor: University of Arizona College of Medicine. Contact: Sandy Younker-Hellman, R.N., B.S.N., Symposium Coordinator, P.O. Box 42195, Tucson, Arizona 85733. Approved for 20 hours of Category 1 credit.

Mutual Support Group Conference
March 30. St. Luke's Medical Center, Phoenix. Sponsor: Service League of St. Luke's Medical Center. Contact: St. Luke's Volunteer Services Office, St. Luke's Medical Center, 525 North 18th Street, Phoenix, AZ 85006.

MARK YOUR CALENDAR

For These Upcoming CURRENT PERSPECTIVES SEMINARS

Presented By
THE ARIZONA MEDICAL ASSOCIATION

March 21, 1984 Wednesday Phoenix	Diabetes Philip Levy, M.D. — Program Chairman
April 26, 1984 Thursday Scottsdale	The Well Adult and Aging Earl J. Baker, M.D. — Program Director

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APRIL

Update: Primary Care 1984
April 3-6. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

Obstetrical Challenges of the 1980's
April 5—7. Mountain Shadows Resort, Scottsdale. Sponsor: Good Samaritan Medical Center. Contact: Deborah Cesena, Good Samaritan Medical Center, P. O. Box 2989, Phoenix, AZ 85062. Approved for 16 hours of Category 1 credit.

The Developing Child
April 13. Registry Resort, Scottsdale. Sponsor: St. Luke's Medical Center, Behavioral Health Center. Contact: Christine Campbell, Director of Meetings, St. Luke's Medical Center, 1800 East Van Buren St., Phoenix, Arizona 85006.

Advances in Pulmonary Medicine & Appropriate Handling of Neurological Emergencies
April 14-21 & April 21-28 (2 part conferences). Lake Powell, Arizona. Sponsors: American Institute of Primary Care Medicine & the University of Arizona, College of Medicine. Contact: EPIC Expeditions, P.O. Box 209, Sun Valley, Idaho 83353. Approved for 24 hours of Category 1 credit.

Neuro-Ophthalmology at the Grand Canyon
April 25-28. El Tovar Hotel, Grand Canyon National Park. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 14.5 hours of Category 1 credit.

Current Perspectives Seminar
The Well Adult and Aging
April 26. Scottsdale. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours Category 1 credit.

Clinical Seminar Series
Diagnosis and Therapy of Cardiovascular Disorders
April 28. Phoenix Hilton. Sponsor University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

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J-4044 January 1984

Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

> WARNING
> This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept, & Nov.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd & 4th Wednesday, 12:00-1:00 p.m. Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Problem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m.

Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.

Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.

Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.

Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.

OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.

Surgery
Weekly, Wednesday, 7:00 a.m.

Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.

Psychiatry Staff
1st Wednesday, 11:00 a.m.

Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.

Medicine Cardiology
1st Wednesday, 12 Noon.

Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.

Medicine Mortality
3rd Wednesday, 12 Noon.

Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.

Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.

Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.

Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.

Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m.

Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7:30 a.m.

Anesthesiology Journal Club
4th Thursday, 8:00 a.m.

Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.

Burn Mortality Conference
4th Thursday, 8:00 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.

Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.

OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.

Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12:30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201. Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A
Weekly, Wednesday, 8:00-9:00 a.m.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved fo Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved fo Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

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GEARING UP FOR RETIREMENT WORKSHOP

Full Day Workshop
Thursday, April 12, 1984

Topics Covered
- What Post Retirement Vocational Opportunities Are Available
- How to Notify Patients
- What Details Are Involved in Closing A Practice
- What Tax Issues Are Involved in Closing or Selling A Practice
- Valuing A Practice For Sale
- What Should Your Family Know About Your Office
- How To Handle A Disability
- Social Security Benefits
- Living Adjustments For You And Your Spouse in Retirement

MEDICAL MARKETING STRATEGIES

Full Day Work Shop
Friday, April 13, 1984

Topics Covered
- Introduction to Getting and Keeping Patients
- Positioning
- Understanding Marketing Objectives
- Maximizing Patient Satisfaction
- Pricing Your Services
- Increasing Your Practice Visibility
- Expanding Your Referral Sources
- Increasing Your Availability to Patients

MEDICAL COLLECTIONS MANAGEMENT WORKSHOP at Paradise Valley Resort, Scottsdale, AZ. For your office assistants - Wednesday April 11, 1984. Half day session for $65. Write or telephone collect for details.

The Faculty
Both workshops will be conducted by professionals of the staff of the AMA Department of Practice Management. All are experienced educators in medical practice management and conduct educational programs nationwide for physicians, office managers, and medical assistants. An income tax deduction may be allowed for educational expenses undertaken to maintain or improve professional skills. See Treasury REGULATION, 1.162-5.

REGISTRATION FORM

☐**Gearing Up For Retirement Workshop**
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Registration Fee: $225 (per physician)

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Friday, April 13, 1984
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Registration Fee: $225 (per physician)
☐Resident Physician $150

Registration fee includes continental breakfast, lunch, workbook and spouse attendance. Other members of your staff may attend for $100. Resident physicians (and spouse) may attend for $150. 100% refund up to 5 days' notice before workshop begins. 80% refund 4 days or less.

Paradise Valley Resort
5401 N. Scottsdale Road
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For More Information Call Collect (616) 962-2684

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ
Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711
Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium.
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium
Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesdays, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm T5, Contact:
Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesdays, 12:00 noon, Rm. T-5 Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8:00-9:00 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursdays, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly Friday. 12:00-1:00 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed elow. Approved for Category 1 credit.

Medical Rounds
st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

601 South Sixtieth Ave., Tucson, AZ 5723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: ay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category credit.

Radiology Conference
st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

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Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
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Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

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Resident's Conference
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Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

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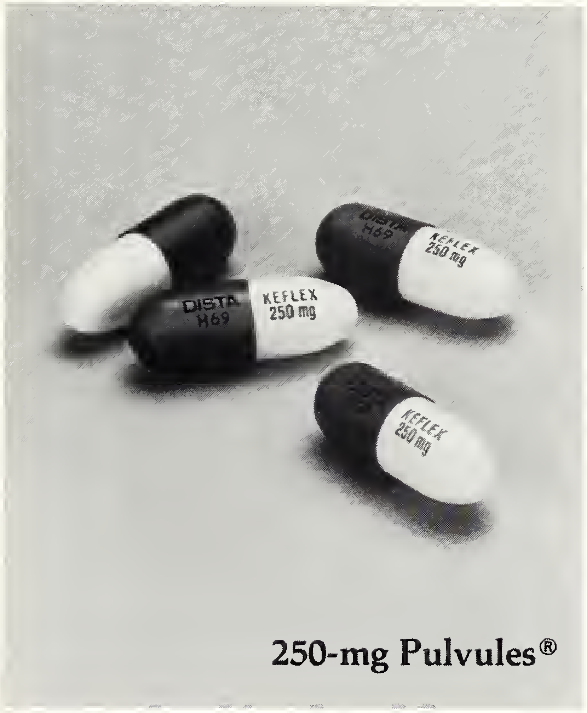

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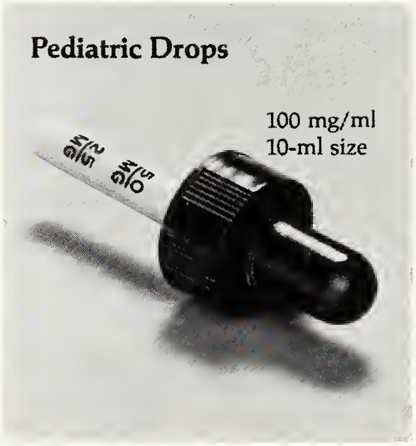

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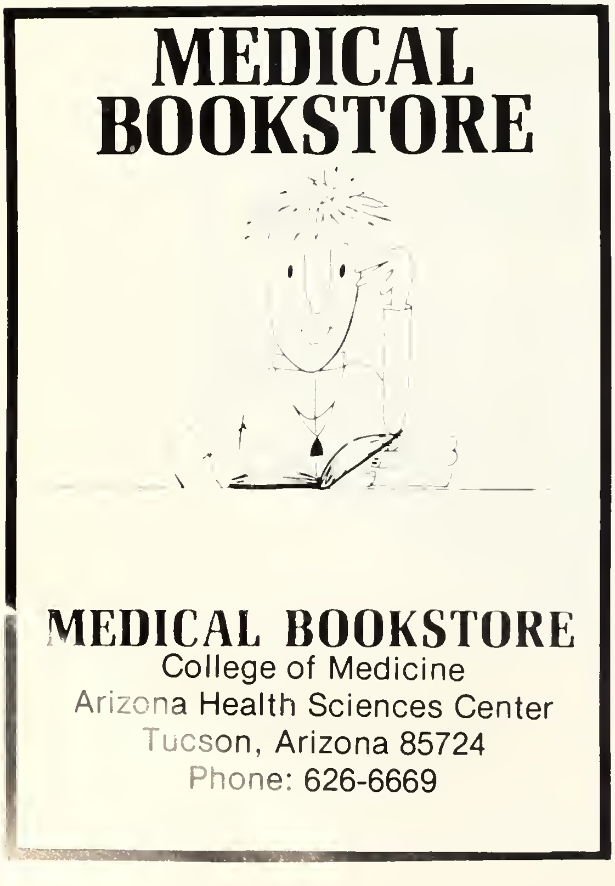

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Dermatology

Anaphylactic Reaction to Kissing Bug Bites

Libby Edwards, M.D.
Peter J. Lynch, M.D.

Editors:
Robert Allen Schwartz, M.D.
Ronald C. Hansen, M.D.

Anaphylactic reactions to bites and stings occur infrequently, and when encountered are usually easily identified as such since the occurrence of the cutaneous insult is recognized by the victim. Bites by arthropods of Triatoma species ("kissing bugs") are an exception since the bite is painless and occurs while the recipient is asleep. Based on our experience with a recent patient we believe that some instances of unexplained nighttime anaphylactic reactions may be due to bites by kissing bugs. This case report is presented to enhance awareness of such an event.

Report of a Case

A previously healthy 65-year-old woman was awakened at 11:00 p.m. on September 27, 1983 with intense pruritus of her left foot. This was followed rapidly by generalized pruritus, diaphoresis, vomiting, explosive diarrhea, the sensation of a lump in her throat, and syncope. Although she was markedly improved by the time paramedics arrived, physical examination revealed a palpable blood pressure of 88, generalized urticaria and angioedema. On arrival in our emergency department she was normotensive and an EKG was normal. No source for her reaction was identified and she was sent home on diphenhydramine hydrochloride, 50 mg by mouth every six hours. She was also given a bee sting kit containing epinephrine for use in case subsequent reactions occurred. During the next two days, the only residual of her anaphylactic attack was an area of persistent erythema, edema and pruritus of her left foot. No punctum within this area was identifiable.

Three nights later she awoke at 2:00 a.m. with pruritus of her arms and external genitalia, diaphoresis, chest tightness, and lightheadedness. Epinephrine 0.3 cc of 1:1000 dilution was administered subcutaneously within minutes, but in spite of this she developed urinary incontinence, became comatose and experienced a transient respiratory arrest. Within five minutes of receiving epinephrine she was conscious and in no distress. Upon arrival in the emergency department her only symptom was residual chest tightness; her physical examination was normal except for a blood pressure of 175/95 and a 3 cm erythematous wheal on her right knee. An EKG showed slight ST segment depression in the anterior chest leads. One hour after arrival at the hospital she developed widespread urticaria which responded to diphenhydramine hydrochloride 50 mg given intravenously. She was then admitted to the coronary care unit where her EKG changes resolved and a myocardial infarction was ruled out. The erythematous wheal on her right knee persisted for three days. A punctum became apparent in the center of the wheal on the day following admission.

A diagnosis of probable hypersensitivity reaction to a kissing bug (Triatoma sp.) bite was made. Confirmation of this diagnosis was obtained when a kissing bug was subsequently found in the sheets of her bed when she returned home.

Comments

Triatoma sp. are found throughout the coastal and southern regions of the United States but their greatest concentration, at least in terms of reported clinical problems, seems to occur in the southwest from Texas to California. The physical appearance of these bugs varies somewhat according to species but in general they are dark brown to black in color and are two to three cm in length. (Figure 1). Small stripes of red or orange are found in the body and wings of some species. The wings are folded across their backs while resting or crawling; the bugs are seldom observed in flight.

Kissing bugs are blood sucking arthropods which

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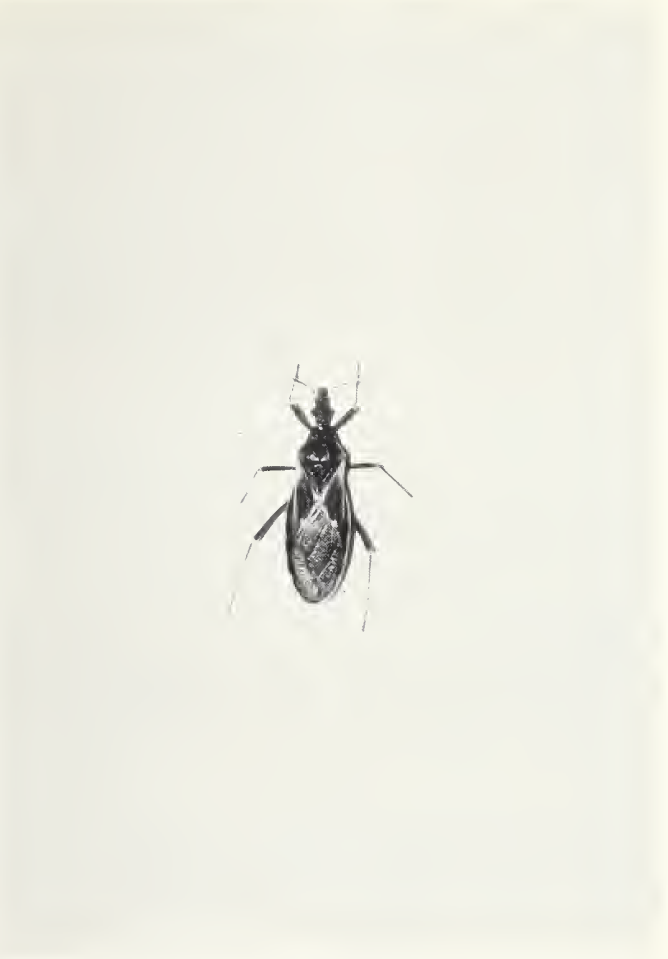

Figure 1
Triatoma species, dorsal view. These arthropods are two to three cm long and have a tapered "cone" nose.

require periodic blood meals from their vertebrate hosts. Generally these hosts are rodents and for this reason the usual habitat for kissing bugs in the southwest is in the nests of desert pack rats. Movement of the kissing bugs away from these nests occurs in cyclic flights starting in late spring and occurring in lesser numbers throughout the summer and early fall. Their migrations occur primarily at night when they move toward the lights of desert homes. Once within the home they adapt readily to their new environment utilizing household pets and humans as their new hosts. Since they are nocturnal arthropods, they are seldom observed during daylight hours unless their dark hiding places are disturbed. Feeding occurs almost exclusively at night, and since a blood meal requires ten or more minutes of sucking only sleeping hosts are bitten.

Clinical reactivity to these essentially painless bites is highly variable.[1] Most individuals who are bitten experience no reaction whatsoever and are thus unaware that they have been bitten. Others suffer significant delayed local reactions noting the development of elevated flat topped pruritic plaques several centimeters in diameter.[2] (Figure 2). Since bites do not occur through clothing most reactions are found on areas of skin not covered by pajamas. The reaction itself may appear urticarial but often the appearance more closely simulates cellulitis. Sometimes a streak of toxic lymphangitis is noted. The lesions remain visible and pruritic for 48 to 96 hours, and as they are fading may be reactivated by scratching. A punctum may be visible but in our experience this helpful sign is only infrequently present. We and others[3] have also observed papular, vesicular and hemorrhagic bullous reactions. The latter are particularly likely to be encountered on the hands and feet where they may resemble the bites of the brown recluse spider.

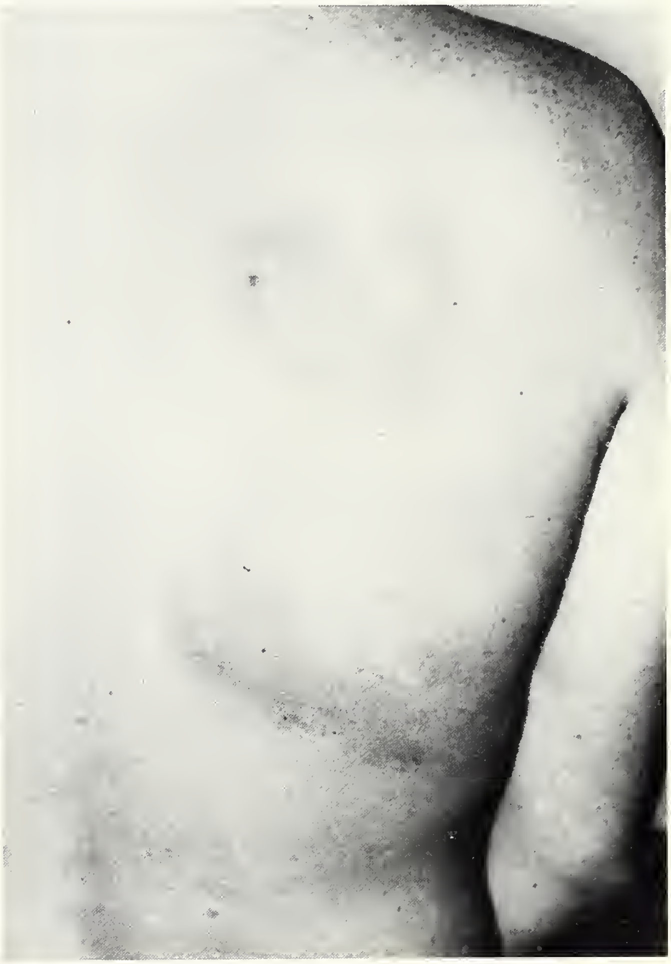

Figure 2
Triatoma bites. The lighter color in the center of these reactions represents edema which is made more prominent by rubbing or scratching. Lesions which have not been recently rubbed may have an appearance which is more cellulitic than urticarial.

A small proportion of those bitten may develop generalized acute allergic reactions as well.[1,2-4] In these instances the victim awakens with the sudden onset of anaphylactic symptoms and signs. Since generalized urticaria is often a part of these acute reactions, the site of the bite, and thus the cause of the anaphylaxis, goes unrecognized by both the patient and the physician. These acute reactions are immunologic rather than toxic in nature. They occur as a result of the injection of saliva during feeding and appear to be mediated via an IgE mechanism.[4,5] Patients experiencing these acute reactions may or may not have been aware of previous sensitizing bites.

Treatment of the delayed reactions is symptomatic. Topically applied corticosteroids and systemically administered antihistamines are widely used. The signs and symptoms of anaphylactic reactions require the immediate use of injected epinephrine and antihistamines. Patients who have experienced anaphylactic or even large delayed reactions should keep "bee sting" kits containing syringes loaded with epinephrine at the bedside and should be taught how to self-administer it. We also recommend the availability and use of epinephrine, or isuprel containing aerosol inhalers, though their usefulness in the treatment of anaphylaxis is controversial.[6] Premedication with antihistamine each night during the kissing bug "season" also seems reasonable, though again the usefulness of this approach remains unproven. It is interesting that abdominal cramping and uterine bleeding per vagina is often noted during acute reactions,[2] and for this reason treatment (and even premedication) with non-steroidal prostaglandin inhibitors might also be useful. Immunotherapy with antigens derived from saliva protein shows some promise,[4] but such antigens are not at present commercially available.

Once a diagnosis of kissing bug bites has been made, several other steps should be taken. An attempt to locate bugs present in the home should be made. Sheets and blankets should be removed from the beds. Piled up clothing, cartons, papers, etc. should be removed from the bedroom, and bulky items of furniture should be moved several inches away from the wall. Openings through vents should be covered and spaces around doors and windows should be sealed. We advise patients to wear men's type pajamas and to apply insect repellent nightly to the remaining exposed skin. The value of house fumigation is unproven, but certainly rat nests in the desert area surrounding the home should be destroyed.

Kissing bugs are the vectors for American trypanosimiasis (Chagas's disease). Trypanosomes can be found in the intestinal tract of a small but significant proportion of the *Triatoma sp.* found in this country but, in spite of this, clinical evidence of disease in the United States is vanishingly rare. This paradox is generally explained on the basis of the small number of bites received per person and on the delayed defecation pattern of those species encountered here.

In summary, any patient experiencing an otherwise unexplained anaphylactic reaction should be regarded as possibly having experienced a kissing bug bite. The likelihood of such etiology is enhanced if the patient lives in a rural or suburban home, if the attack occurs at night, and if a red swollen urticarial plaque remains in place for one or more days after the acute generalized reaction subsides.

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Gastroenterology

Foreign Body Removal from the Upper Gastrointestinal Tract

Robert A. Sanowski, M.D.

Editors:
John J. Wells, M.D.
George E. Burdick, M.D.
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Robert Sanowski, M.D.

While ingestion of foreign bodies is a common occurrence, only about ten percent will fail to pass through the entire gastrointestinal tract.[1] Children and psychotic patients are especially disposed to eating bizarre and common household objects.[2] The primary care physician must establish an early diagnosis of this emergency while the endoscopist must be familiar with the use of a variety of instruments for removal of ingested materials. Current fiberoptic instruments with minor alterations are generally available to facilitate removal.

From: The Gastroenterology Section (111G), Veterans Medical Center, Seventh Street and Indian School Road, Phoenix, Arizona 85012. Reprint requests to Robert A. Sanowski, M.D., Gastroenterology Section, Veterans Medical Center, Phoenix, Arizona 85012.

Small smooth objects such as coins will usually pass through the alimentary tract, but hospitalization is required if the foreign bodies lodge in the esophagus proximal to the diaphragm. Prisoners or other patients who swallow large quantities of foreign objects for manipulative gain, require hospitalization for endoscopic or surgical treatment.[3,4] Food impaction above the cardioesophageal junction is a frequent occurrence in patients with poor dentition or who drink alcohol while ingesting poorly chewed steak. The types of foreign bodies ingested which have a potential for perforation include needles, pins, dentures, toothpicks and bones. Other materials such as ingested hair or food may form bezoars in the intact or postoperative stomach causing symptoms and necessitating removal.

Sites of Impaction

Fifty to eighty percent of esophageal foreign bodies will stick in the cervical esophagus.[4] The anatomical points of narrowing at the cricopharyngeus muscle, aortic arch, left mainstem bronchus and cardioesophageal junction are all within reach of the fiberoptic endoscope. Objects which are long such as spoons and pencils may not negotiate the way through the stomach and must be removed. Peptic esophageal strictures and deformity at the cardioesophageal junction are associated with food impaction. Most sharp objects including needles will pass through the alimentary tract because the axial flow in the lumen combined with reflex relaxation of the muscle wall, tends to turn sharp objects around making the sharp end trail rather than lead.[1] Symptoms of foreign body depend on the area of lodgement. In adults there may be a persistent sensation of something sticking in the throat such as with a fish bone. Symptoms in children may be confusing. They may refuse to take feedings, have increased salivation and vomit. The presence of fever and abdominal or neck pain may indicate perforation.

Diagnostic Workup

If the object is radiopaque it will be seen on a plain radiograph of the neck and chest. (Figure 1). Foreign bodies such as chicken and fish bones, glass, wood or plastic dentures will not be seen by this method and special views of the soft tissues of the neck are necessary. If food impaction has occurred, a barium study is necessary. Since gastrografin is irritating to the tracheobronchial tree it should be avoided if aspiration is possible. Perforation is the most common complication resulting from foreign bodies, but occurs in less than one percent of ingestions.[5] Signs of systemic toxicity associated with ingestion of certain disc batteries may be seen. The alkali and heavy metals which are contained in the batteries may damage the gastrointestinal tract and lead to toxic blood levels of the metals.[6-8] A flat plate of the abdomen may reveal the presence of balloons containing illicit drugs in a recently described group of "body packers."[9,10]

Bezoars of the stomach are frequently well-outlined on barium contrast studies. Gastric surgery resulting in stasis or the eating of hair or other pica accounts for most bezoar formation.

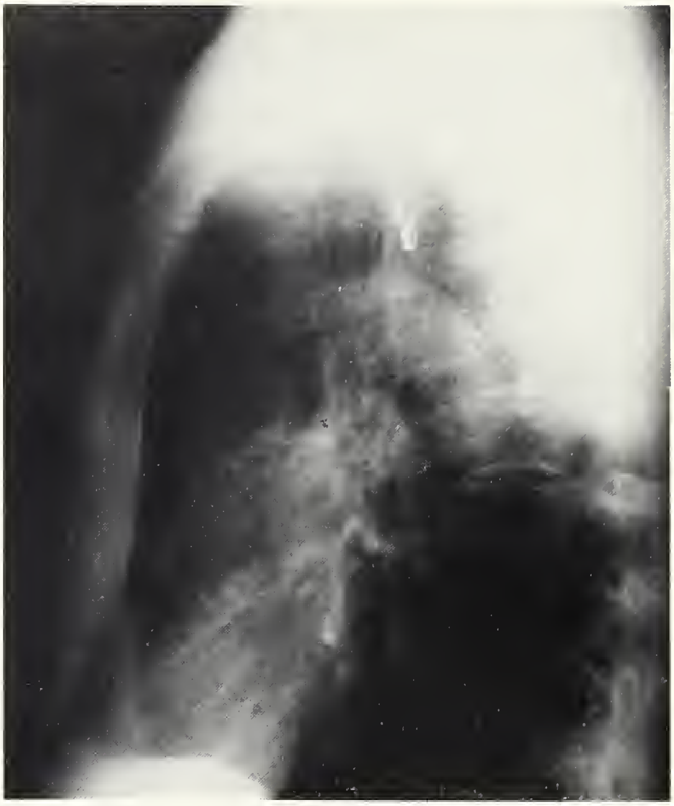

Figure 1
Open safety pin lodged in cervical esophagus

Treatment of Ingested Foreign Bodies

Following localization of the foreign body by radiograph, watchful waiting is indicated since 90 percent will pass. Rigid endoscopy is rarely necessary since fiberendoscopy is safer and is performed without general anesthesia. Stimulants of peristalsis are to be avoided. Objects lodged in the hypopharynx should be removed as soon as possible. If impaction has occurred the object probably will not pass. (Figure 2). Many grasping devices are available for effecting removal. (Figure 3). Older children and adults are sedated with meperidine. To facilitate removal of the object an overtube is placed over the endoscope and the two are passed together. The overtube is of great help since sharp objects may be pulled into it, thus protecting the esophageal mucosa and cricopharyngeal muscle on withdrawal. It also protects the patient from aspiration and has proved helpful in removing food impactions.[11] Coins may be removed with a foreign body forceps or polypectomy snare. (Figure 4). Food impactions may prove especially difficult to remove. Enzymatic digestion of the meat bolus has been advocated but is associated with perforation, aspiration, and death.[12] Impactions of food are best removed with endoscope, overtube and foreign body forceps. Lavage and suction may be performed through the overtube. In general, use of the overtube is suggested in removal of most foreign bodies from the esophagus.

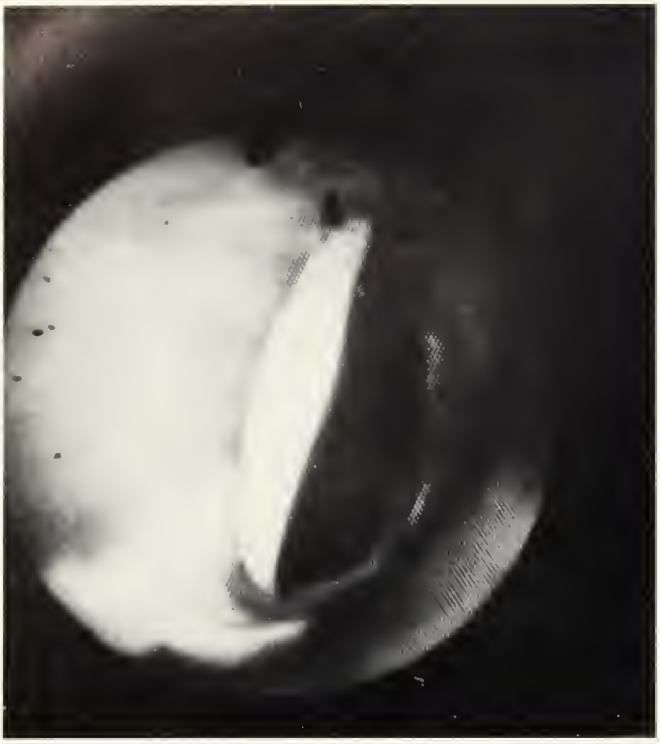

Figure 2
Endoscopic photograph of coin impacted in an esophageal stricture.

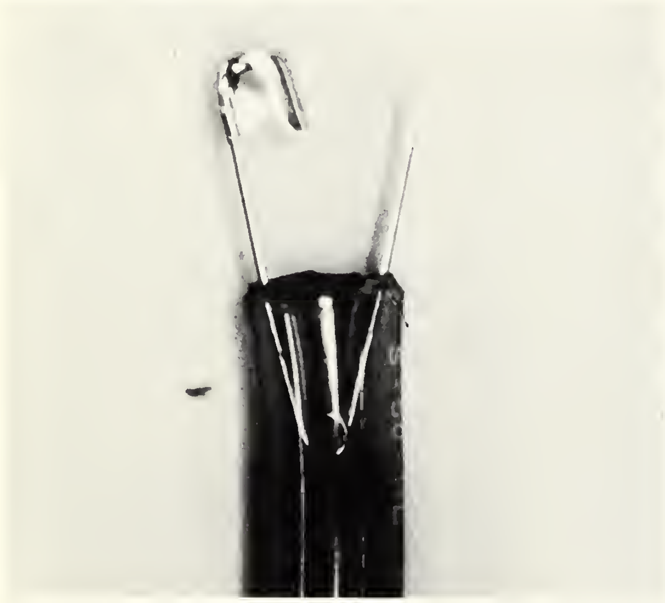

Figure 3
Open safety pin pulled into overtube with endoscope.

Foreign objects which will not pass the pylorus are removed using an overtube and forceps. A polypectomy snare is used to remove long objects such as pencils, spoons or wires. Open safety pins pose a special hazard but are removed with the overtube. (Figure 4).

Bezoars in the stomach which are composed of food may be broken up with the endoscope and then lavaged out of the stomach. Enzymes are not helpful in dissolving these concretions. Hair bezoars must be removed surgically.

Almost anything which can be swallowed can be removed using a fiberendoscope.[13] The success rate exceeds 85% and the method is safe with few complications reported.[5]

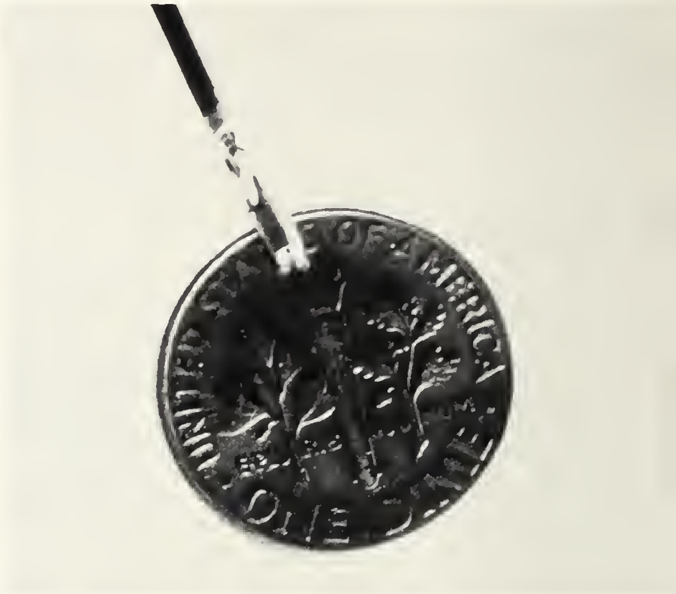

Figure 4
Coin and foreign body forceps used for removal.

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Medical Genetics

Contemporary Management of Lymphoma:

Chromosome Studies

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Frederick Hecht, M.D.

Editor:
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Abstract

Burkitt lymphoma has a chromosome translocation that always involves chromosome No. 8. So does acute lymphoblastic leukemia of the L3 type related to Burkitt lymphoma. In both diseases, chromosome No. 8 is involved in a translocation, usually with chromosome No. 14 and, less often, with chromosomes No. 2 or No. 22. Translocations involving chromosome No. 2 correlate with kappa light chain immunoglobulin production, whereas translocations involving chromosome No. 22 correlate with lambda chain expression.

Chromosome studies of non-Burkitt lymphomas are also informative. Lymphomas of the diffuse type are often characterized by a translocation between chromosomes No. 8 and No. 14, whereas lymphomas of the follicular type may manifest a translocation between chromosomes No. 14 and No. 18. An extra chromosome No. 12 occurs often in small cell lymphoma and in chronic lymphocytic leukemia, supporting a close relationship between these types of lymphoproliferative disorders and the importance of chromosome studies in the diagnosis, staging, management and prognosis of lymphoma.

We have discussed the significance and use of chromosomal (karyotypic, cytogenetic) changes in the leukemias.[1,2] The fact that our initial discussion dealt with the leukemias was no accident, for the description of specific chromosome changes in this group of diseases initially outstripped those in other areas of human cancer. The advances were primarily due to the introduction and application of chromosome banding techniques which made possible the exact identification of normal and abnormal chromosomes and their substructure. Thus, it has been established that the various acute leukemias can be characterized cytogenetically, leading not only to a more precise definition and diagnosis of the acute leukemias, but also to correlations with prognostic and therapeutic parameters.[3] It is not surprising that a number of international workshops have taken place at which the karyotypic data in the leukemias were summarized, analyzed and future directions and needs outlined.[4,5]

Some of the facets of the leukemias which led to their ready characterization cytogenetically included a standardized classification of these diseases, accessibility to tissues and cells (e.g., bone marrow and blood) for chromosome analysis, their high mitotic index and, in some cases, sensitivity to stimulation by mitogenic agents (e.g., phytohemagglutinin (PHA), Epstein-Barr virus, (EB-virus), liposaccharide B, etc.). As in the case of the leukemias, the demonstration of the chromosome changes in human neoplastic lesions must be based on the involved cells or tissues, e.g., in the case of lymphoma, the affected lymph nodes and in other malignancies part of the tumor must be examined.[3] Of course, when the constitutional karyotype of an individual needs to be ascertained, then examination on PHA stimulated blood lymphocytes or cultured fibroblasts is also indicated.

Recent standardization of the lymphomas[6] has made possible a more reliable correlation between the chromosome findings and various forms of lymphomas (Table 1). Already, certain karyotypic anomalies are associated rather constantly with subtypes of lymphoma; in the case of Burkitt lymphoma (BL) the chromosome findings have led to not only a classification of the disease in cytogenetic terms, but also to insights into some of the phenotypic parameters, particularly those related to the types of surface immunoglobulins and various chains associated with different cases of BL.

In the present article we would like to summarize the existing cytogenetic knowledge on the lymphomas and point out its present usefulness and future promise.

Burkitt Lymphoma (BL)

Shortly after the introduction of banding techniques in the early 1970's an abnormal No. 14 chromosome was described in the cells of established cell lines from endemic (African) BL.[7] This anomaly consisted of extra material on the long arm of a No. 14 chromosome, 14q+, but the origin of the extra material could not be ascertained. It was subsequently shown that the 14q+ was due to translocation of material from the long arm of

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From: The Genetics Center and Cancer Research Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281. Avery A. Sandberg, M.D., is a visiting physician-scientist at Southwest Biomedical Research Institute during January-April of each year. Permanent address is Roswell Park Memorial Institute, 666 Elm Street, Buffalo, New York, 14263. Supported in part by grants from the National Cancer Institute of the National Institutes of Health to A. A. S. and F. H. This paper is dedicated to the memory of our colleague and friend, Dr. Henry S. Kaplan (Stanford University), a founding member of the Board of Directors, Southwest Biomedical Research Institute (1978-1984).

Table

Common Chromosome Changes in Human Lymphoma as Related to the New International Formulation and Rappaport Classifications

Chromosome Change	International Formulation of Malignant Lymphomas	Rappaport Classification of Malignant Lymphomas
	Low Grade	
+12,14q+	A. *Small Lymphocytic*	Well Differentiated Lymphocytic, Diffuse
	Consistent with CLL Plasmacytoid	
t(14;18)	B. *Follicular, Predominantly Small Cleaved Cell*	Poorly Differentiated Lymphocytic, Nodular
	Diffuse Areas	Poorly Differentiated Lymphocytic, Nodular, Diffuse
		Sclerosis
t(14;18)	C. *Follicular, Mixed, Small Cleaved and Large Cell*	Mixed, Nodular
	Diffuse Areas	Mixed, Nodular, Diffuse
	Sclerosis	
	Intermediate Grade	
t(14;18)	D. *Follicular, Predominantly Large Cell*	Histiocytic, Nodular,
	Diffuse Areas	Histiocytic, Nodular, Diffuse
	Sclerosis	
?	E. *Diffuse, Small Cleaved Cell*	Poorly Differentiated Lymphocytic, Diffuse
	Sclerosis	
?t(12;14)	F. *Diffuse, Mixed, Small and Large Cell*	Mixed, Diffuse
	Sclerosis	
	Epithelioid Cell Component	Non-Hodgkin's Lymphoma with epithelioid reaction
t(8;14)?t(11;14)	G. *Diffuse, Large Cell*	
t(14;18)	Cleaved Cell	Histiocytic, Diffuse
	Non-Cleaved Cell	
	Sclerosis	
	High Grade	
t(8;14),6q-	H. *Large Cell, Immunoblastic*	
t(14;18)	Plasmacytoid	Histiocytic, Diffuse
	Clear Cell	
	Polymorphous	Mixed, Diffuse
	Epithelioid Cell Component	Non-Hodgkin's Lymphoma with epithelioid reaction
?(1q+,6q-,9q+)	I. *Lymphoblastic*	Malignant Lymphoma, Lymphoblastic
	Convoluted Cell	Convoluted Nuclei
	Non-Convoluted Cell	Non-Convoluted Nuclei
t(8;24),t(2;8),t(8;22)	J. *Small Non-Cleaved Cell*	Undifferentiated
	Burkitt's	Undifferentiated, Burkitt's type
	Follicular Areas	

a chromosome No. 8,[8] but not proven that the translocation was balanced and reciprocal. As the banding methods were refined, it was established that Burkitt lymphomas were characterized by a translocation of a balanced reciprocal nature involving consistently the same bands, i.e., t(8;14)(q23;q32).[9] (Figures 1 and 2).

This translocation was ultimately found both in endemic and nonendemic BL, including cases in Europe, the United States, Japan and other areas thought not to be endemic for the disease.[10-13] In addition, cases of BL with variant translocations, not involving chromosome No. 14 with chromosome No. 8, soon led to a more

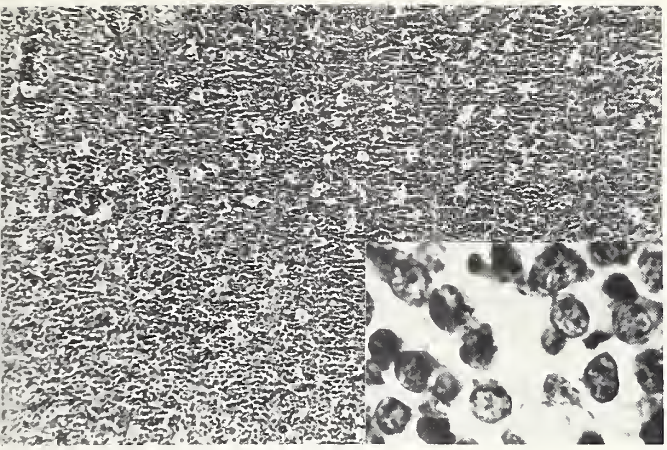

Figure 1
Malignant lymphoma (small non-cleaved cell) of Burkitt type involving the mesentery of the small intestine in a 10-year-old white North American male. Shown are extensive homogeneous infiltrates of lymphocytes with oval or round nuclei forming a "starry sky" pattern characteristic of Burkitt lymphoma. In inset is shown a higher magnification of an area in which are cells with well-demarcated nuclear membranes, coarsely reticulated and irregularly distributed chromatin, 2-5 nucleoli and moderate amounts of cytoplasm, all characteristic of Burkitt type cells.

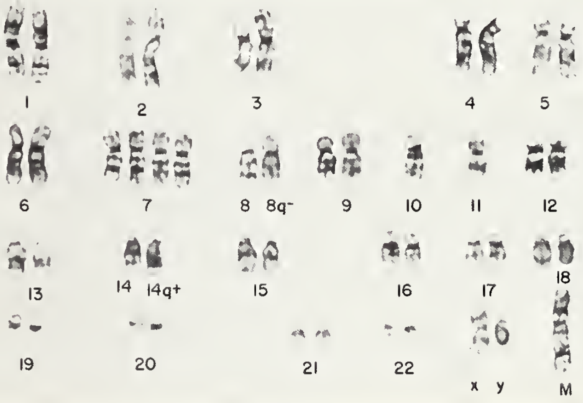

Figure 2
G-banded karyotype of a cell from tumor shown in Figure 1 from a patient with nonendemic Burkitt lymphoma (BL). The cell contains 47 chromosomes and includes a specific (primary) karyotypic change seen in BL, i.e., t(8;14)(q23; q32) shown as 8q- and 14q+. In addition, other (secondary) chromosomal abnormalities (+7, +7,-10,-11, +M) are present and may play a role in the biology and behavior of the tumor and disease. Such secondary changes are common in BL but vary from case to case. The primary karyotypic event, i.e., deletion at band q23 of chromosome No. 8, characterizes probably all BL cases. This case was described by Kakati et al.[31]

complicated picture of the disease than had been realized.[14-16]

Involvement of chromosome No. 8 in translocations with either chromosome No. 2 or No. 22 was described from various parts of the world,[14-16] indicating that the most consistent chromosome change in BL was the break at band q23 in chromosome No. 8, with the deleted material being translocated to chromosomes No. 2, No. 14 or No. 22 (Figures 3 and 4). The histologic and other basic scientific aspects of BL did not appear to differ significantly from that seen in the geographic areas, regardless of the nature of the translocation. Thus, BL appears to be a disease characterized chromosomally by deletion of chromosome No. 8 at band q23. In our opinion, the absence of this karyotypic anomaly (a deleted chromosome No. 8) should make the clinician suspicious that the disease may *not* be BL.

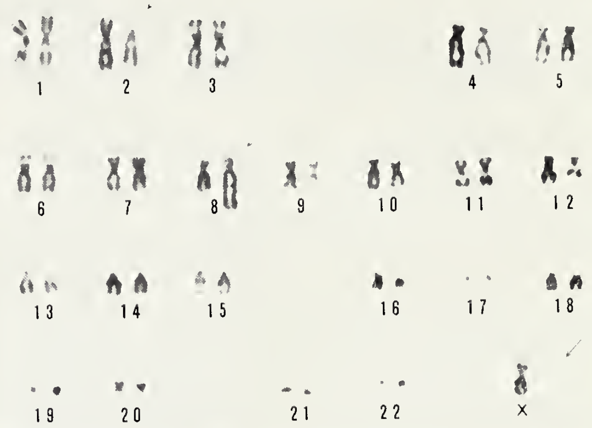

Figure 3
Karyotype of a Burkitt lymphoma cell from a pleural effusion in a 45-year-old Japanese woman with a variant translocation between the short arm of chromosome No. 2 and the long arm of No. 8, i.e., t(2;8)(q11;q24) (short arrows). Longer arrow points to a missing X chromosome. This case was described by Abe et al.[2]

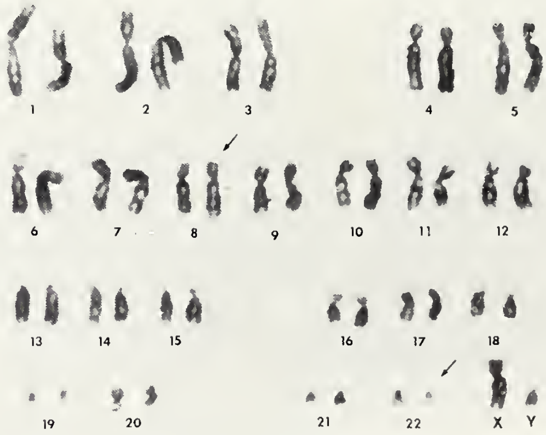

Figure 4
Karyotype of a marrow cell from a 6-year-old white North American boy with Burkitt type acute lymphoblastic leukemia (ALL) with a translocation t(8;22)(q24;q12) (arrows), a variant of the usual t(8;14) translocation seen in BL. This case was described by Abe et al.[1]

Of importance in predicting the clinical manifestations and progress of BL may be the secondary chromosomal changes[17] usually present in BL. These changes may vary from minor to complex ones, consisting of numerical and morphologic changes and additional translocations. It is possible that the nature of the secondary changes determines to a large extent the differences in the clinical manifestations between the endemic and nonendemic varieties of BL.

A disease related to BL is an acute lymphoblastic leukemia (ALL) of the L3 type in the FAB classification[18] whose cells have the morphologic characteristics of BL and in whose cells the same type of translocation (i.e., between chromosomes 8 and 14) its variants are found. This form of acute leukemia has a much poorer prognosis than most of the other forms of ALL.[5] As in BL, the Burkitt-type of ALL is often accompanied by secondary karyotypic changes.

One of the key correlations in BL has been that the type of surface light immunoglobulin chains is associated with the chromosome translocations. Thus, cases of t(2;8) have been shown to produce exclusively kappa light chains, whereas those associated with t(8;22) produce only lambda light chains.[19,20] These cytogenetic findings have served as an important source of information regarding the location of genes controlling the production of surface immunoglobulins. However, the picture is far from complete and much more information will be needed before the gene loci, immunoglobulin production, cytogenetic findings and other parameters of BL (and Burkitt type ALL) can be integrated into a total picture.

It is clear that Burkitt lymphoma and the related type of ALL, which are usually associated with a well defined histologic picture, are characterized by a specific cytogenetic anomaly, i.e., 8q-(at band q23) with the deleted material being translocated to one of three different chromosomes. The specificity of the latter chromosome decides the type of surface immunoglobulins produced by the affected cells. Some complicating and exceptional aspects to the above exist, however, such as rare cases of BL without visible cytogenetic changes.[21] The role played by the EB-virus in this disease entity has not been completely clarified, though it appears not to play a major role in the genesis of either the cytogenetic changes or the disease. In fact, cytogenetic changes similar to those observed in BL and its leukemia form have not been described in cells infected with this virus, either *in vitro* or *in vivo*.

Non-Burkitt Lymphomas

The chromosome findings in the non-Burkitt lymphomas are at present being redefined primarily due to the introduction of an international formulation of the lymphomas.[6] It is already clear that the follicular variety of lymphomas are sometimes accompanied by a translocation between chromosomes No. 14 and No. 18, i.e., t(14;18) (Figure 5) whereas some of those of the diffuse variety have an (8;14) translocation.[22,23] However, exceptions within each category are present in which neither or other translocations are present. Furthermore, in a number of these lymphomas, a rearrangement is present, involving chromosome No. 14, with the origin of the extra material not being rigorously ascertained. It is possible that examination of more lymphomas will ultimately lead to a clarification of the characteristic chromosomal change present in these lymphomas. For example, trisomy No. 12 (+12) is present in diffuse small cell lymphoma which has a close relationship with chronic lymphocytic leukemia (CLL).[22] In the latter leukemia, the +12 anomaly has been shown to be the most frequent, though 14q+ has also been observed.[24-26]

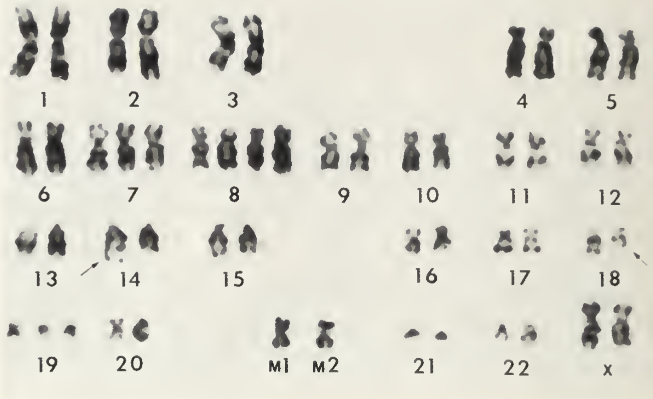

Figure 5
Karyotype of a follicular lymphoma cell showing the translocation t(14;18) (arrows) common in this type of lymphoma and probably constituting the specific (primary) cytogenetic event in this disease. Secondary changes consist of +7, +8, +8, +19 and two markers (M1, M2). This case was described by Kakati et al.[32]

The chromosome findings in Hodgkin's disease have been found to be complex and, to date, no consistent or characteristic cytogenetic change has been reported.[27] A 14q+ has been seen in some cases.[28] The chromosome findings in other (and rarer) forms of lymphoma (lymphoblastic, mycosis fungoides, Sezary syndrome, Lennert's, etc.) await studies in relatively large series of patients and/or appropriate activators of the affected cells, since the karyotypic findings observed in these diseases so far have been rather protean in nature.

Overview

A number of problems arise concerning the cytogenetic data in lymphoma. Generally, the lymphomas are of either B or T cell origin. It is possible that in some lymphomas, particularly of the T cell variety, cytogenetic studies may not encompass the affected cells. In this case stimulation of these T cells by appropriate mitogenic agents may lead to an expansion of the chromosomal data beyond those being obtained without such stimulation. This is particularly true of Hodgkin's disease cells and those of adult T cell leukemia (ATCL) in which, though chromosomal changes of relatively random nature have been described and which are compatible with those seen in neoplasia, uncertainty remains as to the types of cells being examined and the specificity of the changes.[29,30]

Cytogenetic studies can be very useful in cases where the diagnosis of lymphoma is suspected[31,32] (but the clinical and histologic aspects are not clear cut), in establishing the diagnosis of a Burkitt or non-Burkitt type disease, in the diagnosis of pleural effusions of unknown origin and nature, in lymphadenopathies of obscure origin or confusing histology and in differentiating so-called reactive lymphocytosis from lymphoproliferative states.

Not only in lymphoma, but also in most human neoplastic states, it appears that each disease entity is associated with a primary karyotypic change (the Philadelphia [Ph^1] chromosome in chronic myelogenous leukemia [CML] the t(8;21) translocation in acute myelocytic leukemia [AML], -22 in meningioma, etc.) which may be related to the etiology of the leukemia, lymphoma or cancer.[3,17] In lymphoma it would be such events as an (8;14) translocation (or its variants) in BL and diffuse lymphoma, a (14;18) translocation in follicular lymphoma, and +12 in CLL or small cell lymphoma. *Per se*, these primary changes, though necessary for the development of the neoplasia, are not as crucial in determining the biology of the lymphoma or leukemia as are the secondary changes. The latter may be related to such aspects as sensitivity or resistance to therapy, metastatic spread or invasiveness of a tumor and so on. This concept is supported by such observations as the change of CML from an indolent chronic phase to an acute one when karyotypic changes in addition to the Ph^1 appear or in the case of AML with t(8;21), a shift from a relatively favorable clinical course to drug resistance and poor prognosis. Whether a similar situation holds in lymphoma is unknown, since extremely few cytogenetic studies in the early phase or stage of the disease or serial cytogenetic studies are available on which to base a conclusion. Future cytogenetic studies in lymphoma, particularly at the early phases, will be performed, thus yielding data akin to those in leukemia.

Lymphoma is a complicating entity in diseases such as ataxia-telangiectasia, Bloom syndrome and patients with organ transplants or autoimmune disease syndromes.[3,29] Unfortunately, very few lymphomas have been studied cytogenetically in such patients and, hence, it is not clear whether the changes would resemble those described above, i.e., whether the chromosome changes in the lymphoma would be related to the histology of the lymphoma, or whether the karyotypic changes will be unique to each of the primary conditions (disease or transplantation). This is an area of cytogenetics that will contribute much to the understanding of these interesting and complicated disease entities.

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Neurology

A Neuromuscular Approach To Muscle Aches, Cramps and Pains

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Introduction

Muscle aches, cramps and pains are common presenting complaints to the general physician's office. The problem is significant and many people during their adult years will, at one time, experience these complaints. Many underlying general medical illnesses may present with these complaints and a thorough medical and neuromuscular workup is often indicated to delineate the etiology and guide the clinician in a rational therapeutic approach.

Muscle aches and pains are subjective complaints, whereas muscle cramps are palpable and often visible to the observer. From a general approach, patients can be divided into two broad categories: those with muscle pain without cramps, and those in whom significant cramping is present.

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Table 1

Basic Differential Diagnosis of Muscle Aches, Cramps and Pains

Myalgias Without Cramps

- I. Rheumatologic diseases
  - A. Poly-dermatomyositis
  - B. Polymyalgia Rheumatica
- II. Polyneuropathies
- III. Influenza
- IV. Psychogenic

Myalgias With Cramps

- I. Cramping at Rest
  - A. Nocturnal Cramps
  - B. Fluid and Electrolyte Disturbances
  - C. Alcoholic Myopathy
- II. Cramping After Exercise
  - A. Glycogen Storage Diseases
    - 1. Myophosphorylase Deficiency (McArdle's)
    - 2. Phosphofructokinase Deficiency
  - B. Lipid Storage Diseases
    - 1. Carnitine Palmityl Transferase Deficiency
    - 2. Carnitine Deficiency
  - C. Miscellaneous
    - 1. Myoadenylate Deaminase Deficiency
    - 2. Others

Myalgias Without Cramps

Patients with generalized muscle pain who do not have significant cramping often have an underlying general medical illness which may be treatable. The onset of influenza is often heralded by generalized muscle pain as well as low back myalgias. These symptoms, however, are transient and should present no diagnostic problem for the general physician. Two rheumatological conditions often present with the chief complaints of muscle aching or pain. The inflammatory myopathies (poly- and dermatomyositis) may have, as part of their presentation, proximal muscle pain in approximately 25% to 50%. Serum CPK levels are elevated in about 90% of these patients and there are abnormalities found on electromyographic testing (sometimes limited to the paraspinal areas in early cases) in approximately 90% as well. Muscle biopsy often provides pathological confirmation for the clinical suspicion and the illness is treatable with immunosuppressant therapy.[1] Polymyalgia rheumatica may also present with muscle pain, often in the morning or before the patient has become physically active. Unlike the inflammatory myopathies, true muscle weakness is not part of the syndrome, and the serum CPK, EMG and muscle biopsy are normal. The erythrocyte sedimentation rate is elevated.[1] This disease also responds to steroids and the clinician should look carefully for an associated temporal arteritis.

Polyneuropathies may present with myalgias but there is usually associated sensory phenomena, such as distal dysesthesias or paresthesias. A careful neurological examination, with special attention to the distal sensory exam as well as the deep tendon reflexes, often establishes the diagnosis. Nerve conduction velocities are often abnormal and sensory nerve biopsy (e.g. sural nerve) can help to define the etiology of the neuropathy. The tissue must be processed and evaluated utilizing only the most modern techniques developed for nerve analysis.[2]

Many patients will present with muscle pains with no definable etiology on routine history, physical exam and laboratory examination. Nerve conduction velocities and needle electromyography are normal and many neuromuscular clinicians will proceed to muscle biopsy, looking for rare metabolic causes for the patient's symptomatology (see below). Routine histology usually reveals normal muscle or only mild nonspecific changes. Histochemical staining of the muscle is usually normal as well. These patients probably have a psychogenic etiology for their symptoms and may respond to psychotherapeutic agents or psychiatric intervention.

Myalgias with Cramps

The second main category of patients presenting with myalgias is those with true cramping. Cramping may occur at rest or may be prominent after exertion. This latter is typically associated with metabolic myopathies. Spontaneous cramps are common and occur in normal people, often without provocation. They are typically nocturnal and may respond to a variety of medications such as quinine or diazepam. Cramping may also be seen in conjunction with general metabolic disturbances such as fluid and electrolyte imbalance or chronic alcohol ingestion with associated myopathy.

Exertional cramping, on the other hand, is often associated with metabolic myopathies with defined enzymatic abnormalities. The enzymatic defects that have been elucidated fall broadly into two main categories: 1) glycogen storage diseases and 2) lipid storage myopathies.

Myophosphorylase deficiency is the prototype glycogen storage disease producing exertional cramping.[3] The illness is usually familial and the patient experiences painful cramping upon exertion which may become so severe that rhabdomyolysis and myoglobinuria result. These patients eventually learn their exercise tolerance and many find that resting after the beginning of exercise allows them to continue. This second wind phenomenon is possibly due to a shift of muscle metabolic substrates from glycogen to fatty acids. Several other glycogen storage diseases are defined and can be differentiated with enzyme histochemical stains on muscle biopsy as well as by biochemical analysis of fresh frozen muscle.

Carnitine palmityl transferase deficiency and carnitine deficiency fall into the category of lipid storage myopathies.[1] Carnitine palmityl transferase deficiency usually presents with a lesser degree of cramping than that seen in the glycogen storage diseases. Myoglobinuria can be a severe complication of this muscle enzyme deficiency disorder and can lead to acute renal failure. Carnitine deficiency, on the other hand, does not usually present with muscle cramping, but rather as weakness associated with a progressive myopathy.

Several other enzymatic deficiencies of muscle have been recently defined (e.g., myoadenylate deaminase deficiency).[5] Some of these can be diagnosed with special enzyme histochemical staining of muscle biopsy tissue. Detailed biochemistry of frozen muscle samples may be necessary to define the exact enzymatic block.

Evaluation and Treatment of Patients with Muscle Aches, Cramps and Pains

The first step in evaluating a patient presenting with the symptomatology of muscle aches, cramps or pains should be a thorough history and physical examination with attention directed at the neuromuscular system. The presence of true cramping should be ascertained as well as the temporal relationship of the cramping to exercise. Laboratory examination should consist of a complete blood count as well as electrolytes, calcium and magnesium, and erythrocyte sedimentation rate. All patients should also have a serum creatine phosphokinase level as well as thyroid functions.

The next step in evaluation is neurophysiologic testing including motor and sensory nerve conduction velocities and needle electromyography. If the history and physical suggest a metabolic myopathy, a forearm ischemic exercise test should be performed.[6] In the glycogen storage diseases there are blocks in the utilization of glycogen and, as a result, lactic acid is not produced normally with exercise.

In most of these patients muscle biopsy will be needed to make the diagnosis or confirm a diagnosis based on clinical and laboratory testing. The muscle biopsy should be performed by someone experienced in this procedure and the tissue should be analyzed using enzyme histochemical techniques, electron microscopy and quantitative biochemistry if necessary. Although routine tissue staining with hematoxylin-eosin is helpful in identifying inflammatory infiltrates within muscle, enzyme histochemistry is needed to detect the more subtle and unusual disorders of skeletal muscle.[7] It is important that the tissue be handled properly at the time of the biopsy so that artifacts, which can make the slide uninterpretable, do not occur. Once the diagnosis is established appropriate therapy can be administered, e.g. prednisone for inflammatory myopathies. It is important to make the patient aware of the genetics of his condition and it behooves the physician to educate the patient as to the natural history and symptomatology of the neuromuscular disorder.

Table 2

Laboratory Investigation of Muscle Aches, Cramps and Pains

I. Blood Tests
    A. CBC
    B. Electrolytes
    C. Calcium
    D. Magnesium
    E. Erythrocyte Sedimentation Rate
    F. CPK
    G. Thyroid Functions
II. Neurophysiologic Tests
    A. Nerve Conduction Studies
    B. Repetitive Nerve Stimulation (if indicated)
    C. Needle Electromyography
III. Forearm Ischemic Exercise Test (if indicated)
IV. Tissue Analysis
    A. Muscle Biopsy
        1. Histochemistry
        2. Biochemistry (if indicated)
        3. Electron Microscopy (if indicated)
    B. Sural Nerve Biopsy (if indicated)
        1. Plastic Sections
        2. Teased Fibers
        3. Electron Microscopy

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Nutrition

Zinc in the Aged Adult

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It has only been in the past 20 years that zinc deficiency has been described in man. The wide variety of zinc-related clinical disorders, demonstrates the importance of zinc in human nutrition. A severe zinc deficiency associated with losses of body zinc is clinically very severe. However, the importance of mild dietary deficiencies in adults is unclear, even though these deficiencies are extremely common. This brief discussion of zinc and health in the elderly is taken from a more detailed review[1] which is part of larger treatises on nutrition in the aged.

Zinc is widely distributed throughout many foods. In the American diet, meat, poultry and fish provide most dietary zinc, with oysters as a particularly rich source. The recommended dietary allowance for zinc in adults is 15 mg/day.[2] Though the elderly consume significantly less than the RDA, the significance of this prevalent zinc deficiency among the elderly needs further definition and study. Zinc is generally part of metalloenzymes.[3] Zinc metalloenzymes are involved in many metabolic processes including carbohydrate, lipid, protein, and nucleic acid metabolism.

Zinc is absorbed in the proximal small bowel and is normally transported in serum by a variety of protein ligands. Thirty to forty percent is firmly bound to alpha-1 macroglobulin or transferrin and approximately sixty percent is bound to albumin. Hence, serum albumin is a major determinant of serum or plasma zinc levels. Reductions in serum albumin, such as associated with under nutrition in hospitals reduces significantly the available zinc.

Zinc interacts with various hormones, some of which are reduced in the aging adult. Other metabolic functions of concern in the elderly related to zinc nutriture include immune function, wound healing, and catecholamine metabolism.

The bioavailability of zinc among the elderly is a legitimate question to raise. Physicians often recommend increased dietary fiber for elderly patients to prevent constipation and diverticulitis. Phytate and fiber bind zinc and decrease zinc absorption in the gastrointestinal tract. Fiber taken in modest amounts (up to 25 g/day), however, appears to have no significant effect in bringing about negative zinc balances.[4] Ferrous-sulfate has also been shown to inhibit zinc absorption, if zinc and iron are ingested together. Health practitioners should be aware of this interactive effect when prescribing mineral supplements. Further, it has been demonstrated that increased polyunsaturated fat intake and increased phosphorus intake may impair zinc balance. Age may directly affect zinc absorption, although few studies have been carried out to investigate these effects. Following the oral administration of radioactive zinc there is a linear decline of zinc absorption with age in both men and women.

Biochemical Measures of Zinc Nutriture

The problem of assessing zinc nutriture in any population results from the uncertainty of whether any one tissue can provide an accurate reflection of zinc status. Hair zinc levels have been used in many surveys among the elderly. However, it has been shown that plasma zinc does not correlate well with hair levels. Eleven percent of an elderly, low income, black population in Florida were found to have hair zinc levels less than 70 ug/g and/or serum levels less than 70 ug/dl, indicative of zinc deficiency.[5] In general, a range of 0% to 8% of elderly subjects studied have been found to have levels of less than 70 ug zinc/g of hair.

Summarizing a number of recent studies it was suggested that a small percentage (less than 10%) of the elderly have either low hair, serum, or red blood cell levels of zinc indicative of deficiency.[1] The low plasma levels of zinc among the elderly, however, may reflect decreased serum albumin levels and hence decreased zinc binding in the serum. Low levels of zinc in tissues among members of lower socio-economic groups is increased above that of the general population in the United States.

Recommended Dietary Intake of Zinc

We found in a study of institutionalized elderly, who were healthy and mobile, that most had a significantly reduced dietary intake of zinc.[6] The United States Department of Agriculture estimated that half of the females of the United States were eating 50% or less of the Recommended Daily Allowance for zinc.[7] One explanation was that the elderly might have a decreased intake of zinc, corresponding to the decreased caloric intake of people of this age group. With increasing age there is a decline in lean body mass, physical activity and hence, food consumption. For example, aged individuals participating in a congregate feeding program in Indianapolis, 59% were eating less than 2/3 of the RDA for zinc. There was an inverse correlation between hair levels of zinc and dietary intake of fat. This is consistent

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with the observation of the USDA's Food and Consumption Survey that decreased dietary intake of zinc is correlated with reduced energy intake among the elderly.

In an effort to determine whether the dietary allowance for zinc of 15 mg/day is appropriate for application to the elderly, males were confined to a metabolic unit and underwent a balance study. It was concluded that the current dietary recommendation for zinc intake of 15 mg/day was adequate for both old and young adults. However, much further investigation is needed to determine if there are benefits to higher zinc intakes in some individuals or for some specific conditions.

A large percentage of elderly (including institutionalized) are not consuming this desirable dietary allowance. Decreased zinc intakes among the elderly may be related to decreased carbohydrate and fat and/or reduced intake of animal products. Remedies could include increased physical exercise with attendant increased consumption of food. It could also include consumption of more animal products or shell fish which are high in zinc. For institutions and some other elderly, this may be difficult economically. Another approach is to use vitamin pills with zinc. The amount of zinc contained in those tablets is low, 1 to 2 mg/pill. The benefit is potentially good of this small amount of zinc which doesn't increase the cost of vitamin supplements compared to similar zinc free vitamin pills. Zinc sulfate tablets (15 or 25 mg/tablet) containing large amounts of zinc, although cheap, have a possible undesirable side effect. Absorption of copper from the diet is inversely associated with zinc intake. Thus, unless needed for treatment of a clinically defined zinc deficiency, pharmacological doses of zinc do not seem to be indicated by studies of the effects of reduced dietary intakes in the aged.

Therapeutic Trials

One method for assessing zinc status is a therapeutic trial to correct an abnormal state. Since taste acuity is known to decrease with age, it might be related to zinc nutriture, the normal process of aging, or other nutritional changes with age. Institutionalized elderly people were studied for taste changes before and after administration of 50 mg of zinc per day. Taste acuity for salt and sugar did not improve significantly among the elderly receiving zinc supplementation.

Since zinc is necessary for the synthesis of nucleic acid proteins, it has been implicated as critical for wound healing. Zinc supplementation improves leg ulcer healing when administered in pharmacologic doses.[8] Zinc administration significantly improved the healing rate in patients having a serum zinc level of less than 100 ug/dl compared to those who had a level above this.[8] Whether or not pharmacologic doses of zinc are beneficial to the healing process requires further study as the patients benefited by supplementation would not normally be considered to be severely zinc deficient. Zinc has also been shown to play a role in the immune response. We found that little changes occurred secretory or humoral immune responses of elderly supplemental with high levels of zinc.[6] Others found a significant correlation between serum zinc levels and post-immunization antibody titers. Animal studies show the criticalness of zinc for immune functions. Severely deficient diets (0 to 3 ppm zinc) result in reduced antibody production via lower T-helper cells in animals. Suppressed cellular defenses against tumor cells and intracellular pathogens are also significantly suppressed. Such severe zinc deficiency is very difficult to develop in animals. It requires almost total elimination of zinc from all foods and hence occurs infrequently in humans. Milder dietary deficiencies of zinc in animals show few immunological changes. Although T cell immune function declines with aging, possible relationships to zinc nutriture are unclear. Administration of 100 mg of zinc daily increased the total number of lymphocytes in the circulation of elderly people and this correlated with the improved delayed hypersensitivity skin reactions and antibody production. It is possible that these pharmacologic doses of zinc play a role in promoting the immune response, even above the normal levels in well-nourished people. Another aspect of zinc in immunology is that of carcinogenesis. Brief, preliminary epidemiologic studies have suggested a tentative relationship between zinc deficiency and esophageal carcinoma.[9]

Zinc may have many other critical roles in health of the elderly. Zinc may be necessary to maintain the acidity of gastric contents. This is significant to the elderly due to their increased prevalence of gastric atrophy. A high gastric pH could affect the absorption of other micronutrients (e.g. folic acid) and/or underlie bacterial overgrowth of the proximal small intestine.

In summary, various groups of elderly, particularly the diseased, institutionalized, poor, lower-income and blacks show an increased prevalence of marginal zinc deficiency. Serum zinc levels of most elderly persons are maintained within the normal range, although decreasing with age. Hair levels of zinc appear to consistently fall with age. Decreased taste acuity with aging does not appear to be related to zinc nutriture as it is not correctable by administration of zinc. It is possible decreased wound healing ability or a decreased immune function is related to poor zinc nutriture in the marginally zinc deficient elderly. Clearly severe zinc deficiency affects immune functions. Whether beneficial results can be obtained by using very high doses of zinc needs additional study before application to patients. The possibility that zinc deficiency is related to the formation of neoplasia is also in need of further epidemiologic study and basic research. There is no controversy that many elderly have lower intakes of zinc than the Recommended Daily Allowance. The importance of this to health and hence the correctness of the Recommended Daily Allowance for the elderly needs further study and clarification. It is still uncertain whether zinc deficiency plays a role in the decline of specific functional systems in the elderly.

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Obstetrics & Gynecology

Retinopathy of Prematurity: Vitamin E

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Abstract

Retinopathy of Prematurity (ROP) is responsible for approximately 400 to 500 cases of blindness per year in the United States. The establishment (1950's) of oxygen as an etiologic factor[1] resulted in the drastic curtailment of oxygen administration and a parallel decrease in the incidence of ROP. Unfortunately, reduction in oxygen administration resulted in increased cerebral palsy and mortality.[2,3] When clarified (1960's) this resulted in more liberal use of oxygen according to the needs of the individual patient. This factor coupled with the recent increased survival of very low birth weight (VLBW) infants has led to a resurgence of ROP,[4] and further interest in establishing the role of Vitamin E (alpha tocopheral) in reducing its severity. Also, the recent introduction of parenteral Vitamin E now allows early administration and efficacious prophylaxis for ROP even in VLBW infants.[12] Since expedient back transport to secondary centers of infants less than 32 weeks conceptual age has become common many infants will require continued Vitamin E supplementation after leaving the tertiary center. It thus seems timely to review the

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recommendations for utilization of alpha tocopheral.

Key Words: Retrolental Fibroplasia - RLF. Retinopathy of Prematurity - ROP. Alpha tocopheral - Vitamin E. VLBW - Very Low Birth Weight.

Historical Perspective

Heath introduced the term retinopathy of prematurity in 1951.[7] However, RLF was first described by Terry[6] in 1942, and the toxicity of excess oxygen on the retinal vessels was clearly demonstrated in 1951.[1] Subsequently, there was a marked reduction in the utilization of supplemental inspired oxygenation, and a parallel significant reduction in the incidence of ROP. However this period of reduced oxygen supplementation resulted in an increase in mortality and cerebral palsy,[2,3] and subsequent liberalization of oxygen administration.

The introduction of the *Clark Oxygen Electrode* in the 1960's allowed the utilization of oxygen to the individual patient's need, attempting to preserve life while minimizing the incidence of ROP and hypoxic brain damage. Although, transcutaneous oxygen monitoring ($TcPO_2$) has improved our ability for continuous surveillance of arterialized capillary oxygen tensions, such monitoring has limitations for sick infants, and we still lack an accurate technique of continuous surveillance of arterial oxygen tension.

Incidence

The incidence of ROP varies inversely with gestational age. ROP is uncommon in infants over 2000 grams, and 82% of all cases are found in infants who are born at less than 1500 grams.[8] Active ROP is present in 35% of infants less than 1500 grams and only 17% of infants over 1500 grams.[9] Of infants with active ROP, four percent to eight percent develop intravitreous neovascularization consistent with moderately severe grade I and II ROP, and two percent to four percent develop severe grade III, IV, V ROP.[10] In the latter group, a high incidence of blindness results. However, it is important to recognize that in the majority of infants, ROP detected by indirect ophthalmoscopy involves the peripheral retina, is mild (Active stages I and II) and resolves spontaneously over several months without significant visual impairment.

Physiology and Pathophysiology

The immature fetal retina does not have a blood supply of its own until approximately four months of gestation. Prior to this, the thin retinal layer is oxygenated via the choroidal coat, a surrounding vascularized layer of tissue characterized by a high volume and rate of blood flow, and thus a high rate of oxygen delivery. Choroidal blood vessels maintain this high rate of blood flow during hyperoxia and thus are important in the pathophysiology of ROP because they describe a mechanism for exposing the retinal vessels to sustained hyperoxia.[10]

Beyond four months of age, the increased thickness of the developing retina demands that a separate retinal blood supply evolve. This increased retinal growth results in relative retinal hypoxia as the diffusion barrier between the choroidal coat blood supply and the retina increases. This focused hypoxic stimulus causes the orderly vascularization of the developing retina. This process is termed angiogenesis.[10] The retinal capillaries undergo an extensive modification and remodeling process, and unlike the choroidal blood vessels, retinal blood vessels are responsive to changes in arterial oxygen content.

In the kitten model, the retinal blood vessels respond to hyperoxic PaO_2 (generally greater than 100 mm Hg) by vasoconstriction. The nonreactive choroidal blood vessels continue to deliver a high oxygen content to the retina and serve to sustain retinal vasoconstriction so that following five to six hours of hyperoxic exposure endothelial adherence and thrombus formation occurs in the retinal vessels. Vasoconstriction becomes irreversible in many blood vessels at this point, and by three days of exposure vascular obliteration has occurred.[10] This process is not observed in the mature vascularized retina and can be reproduced by mechanical occlusion of the retinal arteries. It results in retinal hypoxia and ischemia which is exaggerated as increased inspired oxygen is reduced. In response to this hypoxia, retinal vasoproliferation or active ROP ensues. This neovascularization makes its appearance during the first month of life and evolves over the first several months of life. Although involvement in the vast majority of cases is mild and resolves spontaneously, the process may proceed to the cicatricial phase which is characterized by scarring, retinal distortion, and possible retinal detachment.[10] Long term residual ophthalmologic findings may include myopia, strabismus, glaucoma, late retinal detachment (2nd or 3rd decade), and in the minority of cases, blindness.[8]

In the newborn infant, gestational age is the single most critical factor other than hyperoxia in development of ROP[5] but there is significant variation in individual response which is likely to be genetic. Other factors such as acidosis, hypoxia, hypercarbia, duration of exposure to hyperoxia, and other complications of prematurity also contribute to the pathogenesis.[11] This process is not observed in the mature, completely vascularized retina, and since the temporal region of the retina is the last to evolve mature vascularity, it is commonly involved even when ROP is mild.

Vitamin E

Vitamin E and superoxide desmutase are two of many such substances that protect living cells from oxidizing injuries like those caused by phototherapy and hyperoxic exposure. These substances act as singlet oxygen quenchers and free radical scavengers which protect cells from lipid membrane disruption and cell death. In addition to stabilizing lipid containing cellular membranes, Vitamin E specifically prolongs plasma clotting time by decreasing production of thromboxane which is a platelet aggregator and vasoconstrictor, and by favoring production of prostacyclin, a potent vasodilator.[10] These functions may be important in preventing irreversible vasoconstriction in retinal vessels. More recently, Kretzer, et al[13] has proposed that the oxygen produces increases in the gap junctions between spindle cells of the immature retina and is the initial morphologic event in ROP. The increased plasma level of Vitamin E maximally suppressed this change.

Vitamin E, like iron, is largely stored during the last trimester of pregnancy, and only crosses the placenta in a 4:1 ratio from maternal-infant blood.[5] Consequently, Vitamin E stores are reduced in premature infants, i.e., the population is naturally deficient. Normal adult levels of Vitamin E (1.0-3.1 mg/100ml)[5] are significantly higher than unsupplemented VLBW infants (0,6 mg/100 ml) at the end of the first week of life. In view of the deficient state of the population, and the recently reaffirmed efficacy of Vitamin E in reducing the severity of ROP in infants ≥ 27 weeks of gestation,[5] it seems appropriate to recommend supplementation of these infants. Oral supplementation (100 mg/kg/day) with Vitamin E has been shown to be efficacious[5] but normal adult levels are not reached until the end of one week and the oral preparation is hyperosmolar (3000 mosm/c).[5] Intramuscular administration of Vitamin E allows a more rapid increase in serum levels to a mean of 2.9 mg/100 cc by day three.[12] Since maximal oxidizing stress and perhaps the related risk for retinal damage occurs in the first twelve hours of life, it seems appropriate to supplement the sick VLBW infant with the recently released intravenous preparation of Vitamin E at birth.

Our approach to Vitamin E supplementation, adopted from Finer[12] and Hittner,[5] is outlined in Table 1. This protocol is followed for all premature infants who are exposed to increased concentrations of inspired oxygen. Oral Vitamin E (100 mg/kg/d) may be substituted for these infants when the baby's status warrants internal intake. Because of the osmolality of the oral preparation (3000 MOSM/L), Hittner[5] recommends diluting the preparation. We mix the oral preparation 1:4 with sterile water and divide the daily dose for bid administration. For infants less than 35 weeks who are not ill or in supplemental oxygen we provide oral Vitamin E (25 mg per day). Beyond 30 days, premature infants are supplemented orally with 25 mg/d until they are removed from oxygen stress or are eight weeks of age.

Eye examination by an ophthalmologist experienced in ROP is most appropriately done at eight weeks of postnatal age. Not only is this the most effective time for a single screening examination[8] but if surgical intervention is necessary in severe cases of ROP, it appears that this may represent optimal timing.[5] If indirect ophthalmoscopic examination is normal at this time and the infant is no longer in supplemental oxygen, no further eye examination or Vitamin E supplementation is necessary.[8] Infants with abnormal eye examinations should be followed by an ophthalmologist with expertise in retinal disease so that appropriate consideration may be given for timely surgical intervention. It has been suggested that infants with active ROP continue with Vitamin E supplementation during the healing stages[10] but current evidence does not clearly support this practice.

Table
Vitamin E Supplementation Schedule

Day	Dosage Schedule
1	25 mg IV or IM at birth; repeat in 12 hours
2-14	25 mg IV or IM per day or 100 mg/kg/day PO divided bid
15-30	25 mg IV or IM q 3 days x 5 doses or 100 mg/kg/day PO divided bid

Summary

The high incidence of ROP in premature infants and the apparent ability to reduce its severity by Vitamin E supplementation to a naturally deficient population has led us to adopt the above protocol. It must be emphasized that Vitamin E is only one of many antioxidants which appears to protect living cells, and although supplementation does not prevent ROP, it does appear to reduce the severity.

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Oncology

Antibodies Reactive with Intermediate Filament Proteins:

New Tools for the Pathologist

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Editors:
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Abstract

Current trends in cancer therapy demand more accurate diagnosis. It is estimated that five percent to ten percent of tumors present problems in classification using routine methods.[1] The use of antibodies against the five classes of intermediate filaments can be very useful in the diagnosis of problem cases and is less time consuming and costly than methods such as electron microscopy. The best results will be obtained if the pathologist is made aware of the case and is able to freeze tissue at the time of frozen section consultation. Fixation in formalin or other fixatives may decrease the detectability of these antigens and lead to false negative results.

Introduction

All mammalian cells contain a cytoskeleton made up of filamentous proteins which can be classified into three main types according to their diameters: the large microtubules (22 to 25 nm in diameter), the small actin filaments (5 to 7 nm in diameter) and intermediate sized-filaments (7 to 11 nm in diameter). The intermediate filaments (IFs) are polymers formed from polypeptides weighing between 40,000 and 70,000 daltons and can be divided into five classes based on differences in their chemical properties, antigenicity, and cellular distribution.[1-3] There are (a) cytokeratin filaments characteristic of all epithelium, (b) vimentin filaments typical of nonepithelial tissue, particularly mesenchymal cells, (c) desmin filaments characteristic of smooth, cardiac and skeletal muscle, (d) neurofilaments characteristic of many but not all neurons, and (e) glial fibrillary acidic protein (GFAP) filaments found in various glial cells, such as astrocytes and Bergmann glial cells. It is now possible to identify these cellular types using specific antibodies to IFs.[1-3]

The usefulness of these antibodies relates to the fact that neoplastic cells retain the type of IF that their progenitor cells possessed even in distant metastases. Thus, undifferentiated neoplasms can be accurately classified into carcinomas, muscle or nonmuscle sarcomas, neural tumors, gliomas, or lymphomas based on the presence or absence of the various IFs (see Table).

Methods

In order to obtain optimal results it must be stressed that IF detection is strongly influenced by fixation. Fixation of tissues in formalin and subsequent paraffin embedding diminishes immunocytochemical reactivity of keratins and vimentin.[5] For example, certain adenocarcinomas, which clearly contain keratin, may be positive on frozen sections but negative on formalin-fixed material.

Intermediate filaments are best preserved in air-dried frozen section material which is briefly fixed in acetone (5 min.). These sections can be conveniently prepared at the time of frozen section diagnosis in problematic cases. The sections are reacted with the specific anti-IF antibody, washed thoroughly, and then reacted with fluorescein-labelled antiglobulin. The results are visualized using an ultraviolet microscope.

Altmannsberger et al. suggest that ethanol fixation followed by paraffin embedding appears to adequately

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Table

Intermediate Filament	Normal Cell Distribution	Neoplasms
Cytokeratins (19 Separate Types 40-68 Kd)	Keratinizing and non-keratinizing epithelia	Squamous cell carcinomas Adenocarcinomas Mesotheliomas
Vimentin 57 Kd	Mesenchymal cells	Lymphomas Melanomas Non-muscular sarcomas Meningioma
Desmin 53 Kd	Smooth, cardiac and skeletal muscle	Rhabdomyosarcomas Leiomyosarcomas
Neurofilament 68,160,200 Kd	Neurons	Neuroblastoma Ganglioneuroblastoma Oat cell carcinoma
GFAP 55 Kd	Glial cells	Astrocytoma Ependymoma Glioblastoma

preserve cytokeratins in glandular epithelia and adenocarcinomas.[6] The concentration of cytokeratins in squamous cell carcinomas and mesotheliomas, GFAP in gliomas, and desmin in muscle neoplasms is great enough that they are usually detectable even in routine formalin-fixed sections. For formalin-fixed specimens the more sensitive peroxidase-antiperoxidase (PAP) technique or avidin-biotin methods utilizing peroxidase activity can be used.

Results

Cytokeratins: In our laboratory we have studied a series of 230 fresh-frozen neoplasms using polyclonal antikeratin antibodies made against human callus. All epithelial derived carcinomas (173), including metastatic neoplasms, were decorated with antikeratin antibodies with the exception of a single metastatic prostatic adenocarcinoma, an acinic cell tumor of the parotid, a Hürthle cell carcinoma of the thyroid, and six renal cell carcinomas. It is now possible, using monoclonal antikeratin antibodies made against the low molecular weight, acidic cytokeratins from glandular epithelium, to stain even prostate, parotid and thyroid neoplasms.[1,2] Biochemical studies have revealed at least nineteen separate cytokeratins.[7] Each epithelial type has a typical cytokeratin "finger print." There are several laboratories, including our own, making monoclonal antibodies to the various cytokeratins. Preliminary results indicate that some of these antibodies have broad reactivity while others may be more selective.[2]

Anticytokeratin antibodies have proved useful in separating undifferentiated carcinomas from melanomas, sarcomas, or large cell lymphomas.[2-4] Epithelial thymomas are strongly positive and can be easily distinguished from negative lymphomas and seminomas of the mediastinum.[8] Small cell adenocarcinomas or undifferentiated squamous cell carcinomas of the lung are diffusely positive, whereas oat cell carcinomas stain with a distinct punctate pattern and are positive for neurofilaments.[9]

Vimentin: Vimentin is found in non-Hodgkin lymphomas, melanomas, and various sarcomas including angiosarcomas, fibrosarcomas, liposarcomas, schwannomas, myxomas and malignant fibrous histiocytomas.[2,3] Epithelioid sarcomas, hemangiomas, seminomas, as well as osteosarcomas contain vimentin. These tumors do not contain cytokeratin, desmin, GFAP or neurofilaments.[1-3]

Desmin: Desmin can be demonstrated in rhabdomyosarcomas, leiomyosarcomas and leiomyomas and have been particularly useful in differentiating embryonal rhabdomyosarcomas in children from other nonmuscular mesenchymal sarcomas.[10] Many of these neoplasms also contain vimentin but are negative for keratin.

GFAP: Antibodies to GFAP intensely stain astrocytic cells. Tascos et al. have shown that anti-GFAP antibodies stain not only all grades of astrocytomas but also glioblastomas, subependymal giant cell astrocytomas and some ependymomas.[11] Brain tumors negative for GFAP include oligodendrogliomas, meningiomas and most neurinomas.[11]

Neurofilament: Antibodies to neurofilaments have been shown to stain ganglioneuroblastomas, pheochromocytomas and oat cell carcinomas.[9] Attempts to demonstrate these antigens in neuroblastomas have been inconclusive.

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Psychiatric Disorders

Malingering:
Detection and Reporting

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Abstract

Malingering, or shamming illness, is the exaggeration or simulation of a medical disorder, but is not a mental or physical disorder, being instead a wrongful act, best detected by physicians' examination. In malingering, neurologic or orthopedic signs or symptoms are seen during examination for pensions, insurance, industrial compensation, workers compensation, social security, military service and the civil and criminal courts.

Detection of malingering always requires proof that the questioned sign or symptom is not due to any diagnosed disorder, and also that the examinee's circumstances clearly account for this questioned sign or symptom. Detection of malingered blindness, deafness, paralysis, anesthesia and coma, by clinical and laboratory examination, is briefly described, malingered signs and symptoms being unphysiologic and unanatomic.

Physician's reporting of malingering requires humility, because malingering may be an act of fraud, and physicians are not trained in describing fraud. The physician should distinguish the act of malingering from the mental status of the examinee who malingers. A report on malingering should describe the questioned signs or symptoms, proof that they are not accounted for by acceptable diagnoses, noting the individual's circumstances which clearly account for these signs and symptoms, and the statement that these signs or symptoms are therefore consistent with malingering.

Malingering, or shamming illness, has been defined as the exaggeration or the simulation of a medical

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disorder.[1-7] Malingering is not a physical or mental disorder.[2] It is instead an intentional, wrongful act, which can best be detected by physicians' examination. The symptoms of malingering "are produced in pursuit of a goal that is obviously recognizable with an understanding of the individual's circumstances, rather than of his or her individual psychology;" examples of obviously recognizable goals are to obtain money or drugs or to evade duty or responsibility for a crime.[2]

The act of malingering is seen during examinations for pensions, insurance, industrial compensation, workers compensation, social security, military service and the civil and criminal courts. Malingering is often the exaggeration or simulation of neurologic or orthopedic disorders; the presence of disorders of any pertinent system should be proved or disproved by following the diagnostic standards of currently acceptable medical practice.[1-2,8-9,10-11] Multiple diagnoses of one patient at one time are acceptable,[2] and malingering may accompany antisocial personality disorder.

Special diagnostic techniques may be useful in the ruling out of malingering, including the oculovestibular reflex examination and the amytal test. The oculovestibular reflex consists of reflex nystagmus and/or tonic deviation of the eyes, in response to irrigating one unoccluded ear canal with ice water for three minutes.

The amytal test is performed by giving sodium amobarbital intravenously, after checking for sensitivity, in 2.5% solution, through a small calibre needle, at a rate of 25 mgm per minute, or less, while proceeding with the examination. Normal persons, early on, show nystagmus on both lateral and upward gaze, as well as later dysathria and dystaxia. Normal persons' behavior may become euphoric, sullen or assaultive. Previously repressed or inhibited thoughts may emerge.[12]On the other hand, normal persons will not become disoriented or aphasic or develop visual field defects; nor will normal persons develop motor weakness or abnormal reflexes, or cutaneous sensory deficits.[13]

General Detecting

Detection of malingering requires proof that 1) the questioned sign or symptom is not due to any diagnosed disorder *and also* 2) features of the examinee's circumstances clearly account for this questioned sign or symptom.

"Blindness"

Malingered total blindness in one or both eyes, or color blindness in a ship's officer[14] almost always can be detected by history, a private investigator or clinical methods of examination.[15] Gun barrel vision, or tubular construction of the visual field is hysterical or malingered until proven otherwise. If hysterical, it usually responds promptly to suggestion.

Vague visual defects, in patients who show no deficit on standard neurologic examination[16] may actually be a sign of multiple sclerosis. When given the amytal test, such patients show the visual and other deficits of demyelinating disease.[13] Similar other patients, considered to have hysterical pain,[16] or to be malingering, when tested in the electrodiagnostic laboratory for visual evoked potentials, show abnormalities which persist[17] also consistent with demyelinating disease.

"Deafness"

Particularly since the Occupational Safety and Health Act, malingering by exaggeration of an acceptably diagnosed hearing deficit in one ear or both, is rife among civilian and veteran personnel.[18] With the audiogram, a sophisticated audiologist can detect such malingering between 100% and 65% of the time,[18] by using the Stenger principle. (Stenger showed that when a pure tone is presented simultaneously to both ears, louder in one ear, the patient will hear the tone only in the ear which received the louder stimulus.)[18,19]

Beyond the inner ear, however, the peripheral auditory and central brain stem auditory nervous pathways can be unilaterally tested by the electrodiagnostician, using auditory brainstem evoked potentials, with a much higher level of accuracy, to detect malingering of nerve deafness.[20,29]

To detect bilateral, partial, feigned deafness, even when the experimental subjects were nurses, trained by an otologist, routine audiograms were sufficient.[21] Malingering of total deafness in one or both ears, a rare event, is usually detected by the history, objective reports, or if necessary, by the EEG.[17]

"Paralysis" and "Anesthesia"

Malingered motor or sensory peripheral nerve deficits, unless the examinee has been coached, do not follow an anatomic pattern. Thus an examinee with the syndrome of an objectively herniated disc at Lumbar 4-5, malingered extreme and excessive weakness in dorsiflexion of the foot, but failed to malinger the expected foot drop. Unilateral foot drop produces asymmetrical wearing of the toes of the shoes.

A laboratory method to detect malingered muscle weakness requires electromyographic technique and a leg holding device. The examinee who complains of muscle weakness is asked to make increasingly stronger voluntary contractions of the assertedly weak muscle, while the motor point of that muscle is stimulated. In malingered weakness, absent pyramidal tract disease, the electric stimulus produces a greater muscle contraction than the examinee's "strongest" voluntary contraction.[22]

An examinee who had a brain syndrome due to overdosage with hydantoin, prescribed for malingered seizures, complained of total paralysis of the extremities, saying, "I am a quadriplegic" and reported no perception of test stimuli below the level of the nipples (T4) and the same vertical level on the arms, both on the lateral side (C5) and the medial side of the arms (T2). Mild disuse atrophy was present, but during the amytal test, she moved both arms. Electro-diagnostics showed normal nerve conduction velocities and normal somatosensory evoked potentials on stimulating the "anesthetic" limbs. (The somatosensory evoked response[29] is the wave generated by the cerebral cortex in response to a stimulus given to an extremity or elsewhere on the body.) She showed a malingered glove and stocking anesthesia.

However, a man complained of pain in the back and anesthesia below the belt line, when the only positive neurologic finding was a loss of vibratory sense in one great toe. Applying the tuning fork to the skin, which loses vibratory sense earlier in the course of disease than do the bony prominences, showed a vibratory loss over the entire body below the belt line. Later, a spinal cord tumor was removed from the thoracic region.[23]

Malingered Unresponsiveness

Feigned unresponsiveness, appearing as malingered sleep, stupor or coma, occurs as an added factor in persons with a valid diagnosis of withdrawal or metabolic encephalopathy due to drugs, or less frequently, a concomitant of other cerebral disorders, or of cardiopulmonary, catatonic, depressive[24] dissociative, conversion and factitious disorders.[2,26]

The oculovestibular reflex examination is of definitive value in detecting such malingered unresponsiveness, because it is probably impossible to voluntarily resist the stimulus of ice water in one ear for three minutes. Without coma of discernible physical cause, there will be quick phase nystagmus away from the side of the stimulation. Plum and Posner[24] state that this caloric test result "firmly indicates that the patient is physiologically awake and (that) the unresponsive state can not be caused by structural or metabolic disease of the nervous system."

Caution-Coaching

To teach the neurologic and psychiatric staffs, Dr. Howard Barrows trained actors and others to simulate histories and physical findings of neurologic symptoms, signs and disorders. His "simulated patients" were trained, for example, to respond with the Babinski triad to stimulation of the lateral portion of the sole and not the medial. They made excellent teaching aides for essential features of coma, seizures, paralyses, sensory loss, reflex changes and blindness, as well as the common neurologic diagnoses.[25,26]

Although an experienced neurologic clinician and teacher was forewarned that some of these benign malingerers were among the examinees, this senior neurologist found it 'extremely difficult' to detect the simulated patients.[27]

Reporting Malingering

Detection of malingering requires knowledge of medicine, as we have seen, but reporting malingering additionally requires some legal information, as well as a bit of humility.

The Humble Delver

Humility is essential for the reporting physician, because malingering is neither a diagnosis nor a disorder, but instead is a condition which is not attributable to any mental disorder.[2] Further, we physicians have not been instructed on malingering in our training and in the medical literature. In 1972 through 1977, Medlars II contained 87 items which mentioned malingering, of which 20 were psychological or psychiatric,[3] compared to the thousands of articles in this literature on each of many topics of medicine, including psychiatric medicine. In this state of ignorance, it is prudent to be humble.

Wrongful Act

Malingering is the intentional performance of a medical fraud. To assert that a person has committed fraud may be a wrongful act, consisting of defamation of character. The physician who makes such an assertion may be sued and held responsible for substantial damages. While the truth, determined by judge or jury, is a defense against charges of defamation, it is unnecessary for the physician to expose himself.

The physician is not liable for damages if his statement or report is made for court purposes—by order of the court, in deposition, to a lawyer, or in oral testimony in court. His statements in these settings have absolute privilege.

The physician is also not liable if the patient has signed a standard form of release of medical information, or if the physician's statements are made in the course of civil commitment for mental illness, even if the latter examination is negligent. But the physician may be liable for such damages if his patient is involved in civil litigation, and the physician gives any aid to the other side in this litigation.[11]

Act versus Status

Distinguishing an act of a person from the mental status of that person, is logical in medicine and has become law. Thus under Federal statute and many state statutes, a "status offender" is a minor whose act—truancy, curfew violation, or possession of alcohol or tobacco—would not be an offense if he enjoyed the status of being an adult. Key cases differentiate the act of using a drug, from the status of being a drug addict: in *Robinson v California*, the U. S., Supreme Court held that it was constitutional to punish a person for performing a wrongful act but not for his mental status.[28]

Since the physician's reporting of malingering is medicolegal reporting, it is logically and legally advisable to follow this distinction between act and status. The physician should describe the act, consisting of signs, symptoms, complaints, conditions or behaviors, which lie within the area of his professional expertness. It then becomes unnecessary for him to tread the soft earth of tort law, which he would, if he were to state that the examinee "is a malingerer."

The Report

Because the social and personal risk/benefit ratio may be a high one, I recommend that the physician mention malingering only when he can prove it to be present, the exception being a finding or mention of malingering in the previous medical or legal history of the case, when he may attribute this finding to its source.

If the physician does report on malingering, he should do so in four progressive steps: 1) Noting the specific signs, symptoms, complaints, conditions or behaviors which are suspected of being malingered. 2) Listing the diagnoses which may account for these signs, symptoms, complaints, conditions or behaviors, with proof that these diagnoses are not correct in this case. 3) Mentioning the individual's circumstances which clearly account for the above signs, symptoms, etc. 4) Stating that these specific signs and symptoms, etc., are therefore *consistent with malingering.*

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Radiology

Case of the Month No. 71

Michael McBiles
Wilford A. Potter, M.D.
John K. Crowe, M.D.
Jonathan M. Levy, M.D.

Editor:
Donald Schon, M.D.

An 8-year-old girl had recurring urinary tract infections. A voiding cystourethrogram (VCU) (Figure 1) and intravenous urogram (IVP) (Figure 2) were done. On the basis of these studies, a diagnosis of bilateral megaloureter was entertained.

Do you agree with this diagnosis?

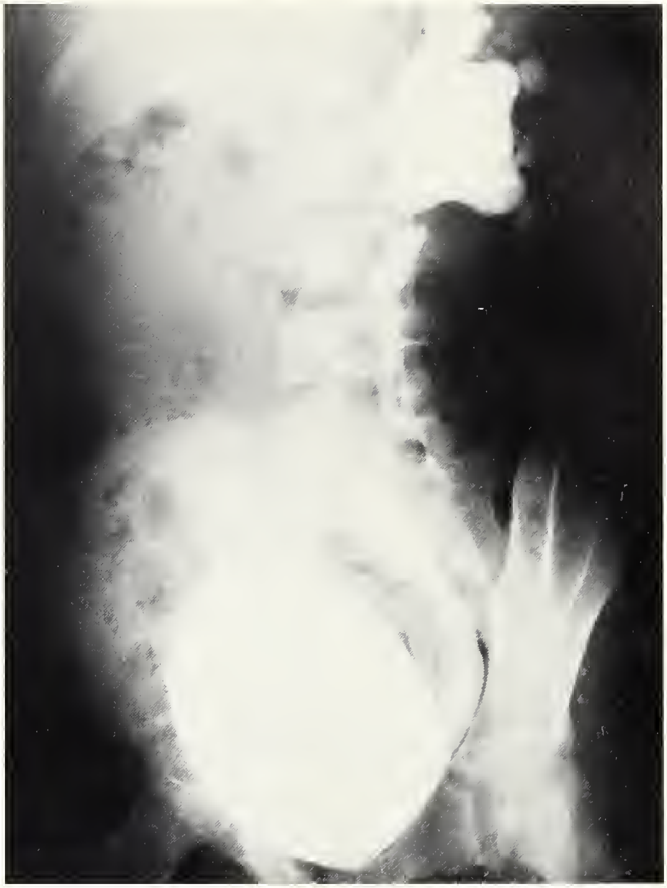

Figure 1

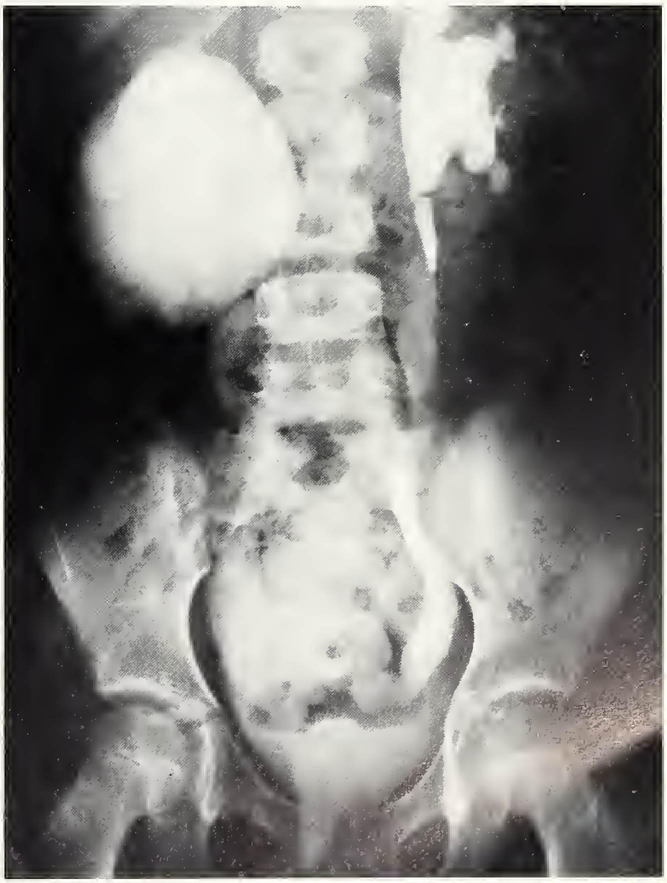

Figure 2

From: The University of Arizona School of Medicine (MM), and the Departments of Urology (WAP) and Diagnostic Radiology (JKC,JML), Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251.

Answer:

1. Vesicoureteral reflux on the left.
2. Right pyelocaliectasis due to ureteropelvic junction obstruction.
3. Probable pre-existing bilateral megaloureter.

Dilatation of the ureters can be produced by many processes. In each case, it is important to identify the responsible mechanism, since management varies considerably. This determination is hampered by continuing controversy over the classification and nomenclature of dilated ureters.

As an example, "megaloureter," "megaureter" and "hydroureter" have all been used interchangeably in reference to any dilated ureter. Many authors, however, restrict the term megaloureter to refer to the dilation caused by a short extravesical distal ureteral segment that is not anatomically obstructed or refluxing, but which fails to transmit a peristaltic wave. Other terms, such as "nonrefluxing, nonobstructed megaureter" and "aperistaltic megaureter" have been used, but are not universally accepted. Further confusion is generated by disagreement over the exact etiology of the aperistaltic segment, although the mechanism of dilation proximal to this segment is generally agreed to be similar to that occurring in Hirschprung's disease of the colon.

The radiographic appearance of megaloureter, as defined above, is characterized on excretory urography by the following:

1. Unilateral or bilateral disproportionate dilatation of the lower portion of the ureter, even when the entire uretero-calyceal unit is dilated. This finding is the hallmark of the disease, and stands in contrast to the proportional dilatation of the ureter and calyx when obstruction is present.
2. Abrupt fusiform tapering of the distal dilated ureter just proximal to the aperistaltic segment.
3. Delayed ureteral emptying.
4. Nonopacification of the distal aperistaltic segment, although this finding is infrequently seen, unless special views are taken, because of superimposition of the unopacified bladder.

The diagnosis of megaloureter is clinically important, since in contradistinction to other causes of dilated ureter, treatment is generally conservative. The natural history of the disease is often characterized by very slow or nonprogression of dilatation. Megaloureter is often asymptomatic, though infection or stone formation secondary to stasis may occur. A number of patients with megaloureter (20% in one series) may also have obstructive findings at some time during their disease. Such complications may superimpose other radiographic findings upon those already described, as seen in this case, where right pyelocaliectasis is a sign of right ureteropelvic junction obstruction. (Figure 2). The voiding cystogram (Figure 1) shows complete reflux on the left but none on the right, suggestive of superimposed infection causing reflux on the left, and further illustrating superimposition of radiographic findings. Cystoscopy and cystography showed normal bladder and ureteral orifices.

Because of the unpredictability of the natural history of megaloureter, interval observation and urography is indicated. Surgical treatment is indicated for complicated megaloureter (chronic pain, calculi, chronic or recurring infection or progressive pyeloureteral deterioration) and consists of resection of the adynamic segment and reimplantation of the distal normal ureter into the bladder.

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Editorial

Alzheimer's Disease

Neuropathological studies indicate Alzheimer's disease to be the leading cause of mid- and late-life dementia, representing 40 to 60 percent of most clinical series. Multi-infarcts are recognized as the second most common cause, with a range of other disorders accounting for the remainder. Although plagued with methodologic difficulties, epidemiologic studies have indicated the cumulative probability of developing Alzheimer's disease or multi-infarct dementia before the age of 65 to be less than one percent. However, incidence increases after this age, rising rapidly after age 75. Senile Dementia of the Alzheimer Type (SDAT) has become a major health problem in the United States, with at least 500,000 persons severely afflicted, and many more in earlier stages of the disease. SDAT appears to account for 40 to 50 percent of nursing home admissions, and more than 100,000 excess deaths per year. Given increasing survival into older age, it has been estimated that the prevalence of SDAT will triple by the year 2050, if prevention or effective treatment is not discovered.

Clinicians and other researchers at the University of Arizona College of Medicine have been actively involved in the care of SDAT patients, and in the search for better diagnostic methods and more effective treatments. Since more than 50 disorders may produce dementia in adults, with several of these treatable, differential diagnosis is of high priority. Faculty from internal medicine, neurology, psychiatry, neuropsychology, family and community medicine, social work, and others actively participate in the diagnosis and clinical care of SDAT patients at Univeristy Hospital and its clinics. Several ongoing research projects are concerned with better characterizing the nature and course of SDAT, in an effort to improve our accuracy in early diagnosis. A recently completed study, performed in collaboration with investigators at Rush Medical College in Chicago, longitudinally evaluated a group of SDAT and matched healthy elderly, employing neuropsychological, electrophysiologic, CT scan, clinical neurological, psychiatric, and physical examination procedures. Although the data is in the early stages of analysis, a clearer picture of the longitudinal correlates of mental deterioration in SDAT, as well as useful directions for improved early diagnosis is appearing. Another project, completed at the University of Arizona, examined the course of language and other cognitive deterioration in SDAT and other progressive degenerative disorders of the central nervous system. Results suggest that subtle changes in language functioning may be one of the most sensitive early indices of dementing illness. Faculty here are also presently involved in multi-center trials of various pharmacologic agents employed to treat the symptoms of SDAT. While no currently available pharmacologic intervention holds promise as a cure for this disorder, evaluation of possible symptomatic improvement is important. Finally, research by basic science investigators into brain structures and neurotransmitter systems known to be affected in SDAT, promises to provide fundamental understanding of the complex pathophysiology of this disease.

While improved methods for diagnosis and prognosis, and intensive search for etiology and treatment are needed and important, there is also a need for improved approaches to care and management of the SDAT patient, and for informed assistance to their family members. The signs and symptoms of SDAT are particularly distressing for family members and friends to witness. As victims become less able to use their mental faculties, their memory, spatial orientation, language and other cognitive functions become increasingly impaired, and they are frequently found lost or wandering outside the home. Changes in environment or intercurrent illness (e.g., infection) often compound the severity of deficits. With severe progression of the disease, patients are unable to care for themselves. They may be unable to feed and dress themselves, and they may be unable to recognize familiar persons. These features place both physical and emotional burdens upon the family. Ongoing research within the College of Medicine focuses upon better understanding the relationship between patient behavior, disability, and communication deficit, and the perceived distress of family members. It is hoped that such research will lead to improved recognition of variables predictive of family distress, allowing earlier intervention and assistance. Planned future research will examine physical safety risks in the living environments of SDAT patients, in an effort to reduce injury and excess disability. Of great importance has been the establishment of several Arizona chapters of the Alzheimer's Disease and Related Disorders Association, which provide information, family support, referral and other services for SDAT patients and their families. Several University of Arizona faculty members were actively involved in the creation of these chapters, and continue to support them in various administrative and advisory capacities. Faculty members have also been involved as advisory board members of the national Alzheimer's Disease and Related Disorders Association, National Institutes of Health study sections concerned with SDAT-related research, and the Department of Health and Human Services task force on Alzheimer's disease.

These and other faculty activities reflect the continuing commitment of the College of Medicine to teaching, research and service in areas of relevance to the people of Arizona. The "aging" of our nation's population, particularly within the southwestern states, mandates a high priority for our efforts concerned with SDAT and related disorders.

Alfred W. Kaszniak, Ph.D.
Associate Professor
Department of Psychiatry

Louis J. Kettel, M.D.
Dean
College of Medicine

CONFLICTS in Medicine

THIS IS DR. PEABODY... IS DR. JONES IN?
10:30 AM
DR. JONES? NO! HE'S OUT TO LUNCH!
DR. JONES PSYCHIATRY
BERT WHIT-MAN

Library Talk

The APDIC/Library Connection

Bertha R. Almagro

Within the quiet atmosphere of the University of Arizona Health Sciences Center Library resides one of the most dynamic and exciting departments in our institution. I am referring to the Arizona Poison and Drug Information Center (APDIC) whose activities extend far beyond our walls, serving the community and the people of Arizona, as well as our Mexican neighbors from across the border. The relationship between the APDIC and the Library is a perfect example of mutual support, in which physical resources and human interaction blend to provide maximum efficiency. The Library supplies a well developed collection of books and journals vital to the needs of the APDIC activities, while computer access to numerous databases (MEDLINE, TOXLINE, etc.) enhances the retrievability of a wealth of information. Also, the use of our Interlibrary Loan Services places at their disposal the collections of other resource libraries. The APDIC is staffed 24 hours daily by clinical pharmacists to assist health professionals and the public, and since the University of Arizona Health Sciences Center Library is also open 24 hours daily, they have all-time accessibility to the richness of its collection.

The Library holds an extremely valuable collection of formularies, pharmacopoeias, drug indexes, handbooks, etc., in various languages, as well as a vast number of works on poisonous and venomous animals, insects, and plants from all over the world. The strength of the collection is maintained with input from our users, and the APDIC plays an important role in recommending material suited to their specific areas of interest. The Library draws from the expertise of their members in assessing the quality, depth, and breadth of the material purchased, to the overall benefit of our clientele. The Library also has a very comprehensive collection of journals in the area of Pharmacology/Toxicology, and the APDIC is also consulted when new titles of relevance to their work are under consideration for subscription, or for deselection (weeding).

Continued on page 194

From: Assistant Librarian for Processing Services. The University of Arizona Health Sciences Center, Tucson, Arizona 85724.

Briefly Noted

Robert L. Anderton, M.D., immediate past president of the Yuma County Medical Society, reports that eligible residents of Yuma County who need medical care but are unable to pay for it are now being treated through *Project Concern*. **Thomas N. Suciu, M.D.**, society vice president, says that the project was started informally about six months ago, but was not fully operational because of the lack of a full-time clerical staff. With the participation of the Yuma Regional Medical Center to provide screening and record keeping, members of the Yuma County Medical Society will now be able to care for more of the medically needy who cannot afford to pay for their medical treatment and are not covered by AHCCCS.

Richard J. Bailey, M.D.

Richard J. Bailey, M.D., Scottsdale, has been elected president of the medical staff of Scottsdale Memorial Hospital-Osborn for 1984. Other staff members include **Jack S. Weiss, M.D.**, who was named president-elect and **Peter A. Jolma, M.D.**, secretary.

Jack S. Weiss, M.D.

Allan I. Cohen, M.D., and **Charles M. Rucker, M.D.**, Phoenix, discussed cardiovascular disease on ArMA's February *Health Highlights* cable television program.

Jack E. Cook, M.D., Scottsdale, announced that the Family Practice Center of Scottsdale Memorial Center has received a grant from the Edyth Bush Charitable Foundation, Inc., for the purchase of a computer system.

Donald E. Lee, M.D., Phoenix, has been elected to a two-year term as president of the medical staff of St. Joseph's Hospital and Medical Center, Phoenix. Other newly elected officers are **William A. Susong, M.D.**, vice-president; **John C. Bull, M.D.**, secretary-treasurer; and **Clyde W. Kurtz, M.D.**, member-at-large.

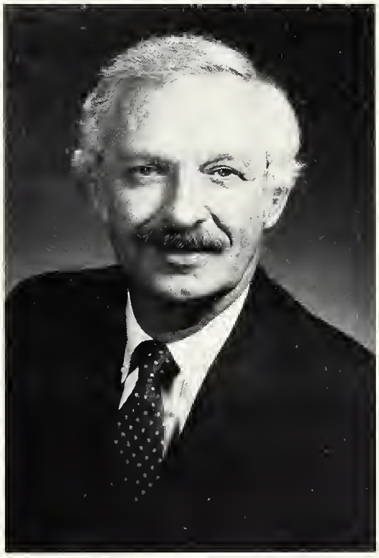
Peter A. Jolma, M.D.

Lawrence M. Linkner, M.D, Phoenix, was promoted to senior vice president-medical affairs, at Blue Cross/Blue Shield of Arizona.

William Lee Lovett, M.D., Phoenix, has been appointed president of the Arizona Chapter of the American College of Surgeons. Officers presiding under him are **Lawrence Norton, M.D.**, president-elect; **D. Nick Morrison, M.D.**, vice-president; **A. Lee Ansel, M.D.**, secretary-treasurer; council member-at-large is **Ronald S. Gardner, M.D.**, Prescott.

Cesar V. Maderazo, M.D., Youngtown, has been elected chief of staff for 1984 at Valley View Community Hospital. Serving with Dr. Maderazo are **Robert L. Wilson, M.D.**, vice chief of staff, and **Richard V. Jaynes, M.D.**, secretary-treasurer.

William N. Neubauer, M.D., Tucson, was recently installed as president of the Pima County Medical Society. Other officers are **Ronald P. Spark, M.D.**, president-elect; **Gary L. Henderson, M.D.**, vice president; and **E. Luis Aguilar, M.D.**, secretary-treasurer. New members of the board of directors, who also serve as delegates to the Arizona Medical Association, are **Drs. Robert J. Armbruster, William J. Casey, Jr., Samuel Goldfein, Eric H. Prosnitz, Arthur B. Schachter, F. A. Shallenberger, Jr., Debra Walter** and **R. Wayne Wood.**



Donald E. Lee, M.D.

Gordon L. Ritter, M.D., Riviera, recently received a public commendation from a grateful patient in a letter to the editor of the Mohave Valley News.

Donald F. Schaller, M.D., Phoenix, has been appointed medical director of McAuto Systems Group, Inc. under the AHCCCS program.

Robert L. Winsky, M.D., Tucson, was one of 36 physicians recently inducted into the 430-member American Academy of Clinical Psychiatrists.

The Public Relations Committee of the Arizona Medical Association presented a P. R. seminar for ArMA leadership in January at the ArMA Building, Phoenix. **Ms. Toba Cohen**,

William N. Neubauer, M.D.

Director of Communications for the American Medical Association, and **Ms. Jane Coughlin**, Director, Consulting Services, AMA, discussed the changing role of public relations in the medical profession. A full report of this important presentation will be featured in a future issue of FYI which comes to you with Medical Memos.

Drs. Robert K. Phillips, Sedona and Andrew R. Thomas, Phoenix, review the Med Awards Program brochure at the January meeting of the Public Relations committe Artwork for the brochure was done by Arizona Medicine editor, Marshall B. Bloc M.D.

At the Public Relations seminar (L to R) Jane Coughin and Toba Cohen of the AMA with Drs. Walter J. Nieri and Marshall B. Block, Phoenix

The Arizona Medical Association welcomes the following new members:

Gila County

Michael Royal Durham, M.D.
Emergency Medicine
16 Palo Verde Lane, Globe
University of Guadalajara - 1977

Graham County

Thomas C. Hargis, M.D.
Family Practice and General Surgery
2020 West 16th Street, Safford
University of Arizona - 1973

Maricopa County

Allen Lefler Browne, M.D.
Obstetrics and Gynecology
560 West Brown Road, No. 4010, Mesa
University of Michigan - 1978
Hezekiah U. Chinwah, M.D.
Emergency Medicine and
Internal Medicine
9211 North Second Street, Phoenix
Albert Einstein College
of Medicine - 1975
Charles W. Landgraf, Jr., M.D.
Psychiatry and Neurology
450 West Fourth Place, Mesa
University of Nebraska - 1949
Robert T. MacLachlan, M.D.
Psychiatry
4910 North 44th Street, No. 18, Phoenix
Medical College of Virginia - 1979

Peter P. Menghini, M.D.
Anesthesiology
1040 East McDowell, Phoenix
Creighton University School of Medicine - 1971
Robert H. Page, M.D.
Family Practice
1050 East Southern, Tempe
University of Guadalajara - 1971
John A. Shaw, M.D.
Radiology
550 West Thomas Road, Phoenix
University of Utah - 1969
Taghi Tavassoli, M.D.
Urology
1300 North 103rd Road, Sun City
Tehran University - 1967
Lisa M. Wright, M.D.
Family Practice
3212 North Woodburne, Chandler
astern Virginia Medical School - 1978
David H. Young, M.D.
General Surgery
350 West Thomas Road, Phoenix
New York Medical College - 1972

Mohave County

Donovan John Anderson, M.D.
General Practice
1041 Hancock Road, Riviera
Loma Linda University - 1981

Pima County

James E. Buttke, M.D.
Anesthesiology
1773 West St. Mary's Road,
No. 104, Tucson
University of Wisconsin - 1977
George K. T. Chung, M.D.
Cardiovascular Surgery
5200 East Grant Road, No. 612, Tucson
University of Chicago - 1967
John S. Copley, M.D.
Occupational Medicine
P. O. Box 31480, Tucson
University of Nebraska - 1961
Gary J. Doyle, M.D.
Anesthesiology
5200 East Grant Road, No. 602, Tucson
University of Arizona - 1977
Leslie Kirk, M.D.
Internal Medicine
5708 East Burns, Tucson
University of Oregon - 1968
John Cordell Medlen, M.D.
Pathology
4900 East Fifth, No. 320, Tucson
University of Arizona - 1975
Bernard M. Morenz, M.D.
Psychiatry
2800 East Ajo Way, Tucson
Indiana University - 1978
Richard D. Ranne, M.D.
General Surgery
244 North Plumer Avenue, Tucson
University of Arizona - 1977
William L. Roberts, M.D.
Anesthesiology
5200 East Grant Road, Tucson
University of Arizona - 1978
Lawrence P. Temkin, M.D.
Internal Medicine
3444 North Camino Esplanade, Tucson
Yale University School of Medicine - 1972
Marius M. Wagner, M.D.
Internal Medicine
5681 Paseo del Cenador, Tucson
Bucharest University - 1973

Service Members
Cochise

Dean D. Ettinger, M.D.
Pediatrics
U.S.A. MEDDAC
P. O. Box 54, Fort Huachuca
University of Texas - 1977

Maricopa

Earl E. Roth, Jr., M.D.
Pediatrics
1250 East Mesquite Street, Gilbert
Medical College of Wisconsin - 1977

Associate Members
Maricopa

Richard J. Steves, M.D.
Dermatology
10144 Boliver Drive, Sun City
Northwestern University - 1937
Dalton M. Welty, M.D.
Internal Medicine
10122 East Watford Way, Sun Lakes
Johns Hopkins University School of Medicine - 1979

Resident Members
Maricopa

Patrick Wayne Donahue, M.D.
Family Practice
Good Samaritan Hospital
University of Colorado - 1983
Marilyn Miller Newson, M.D.
Neurology
St. Joseph's Hospital
University of Miami - 1981
Nello A. Rossi, M.D.
Internal Medicine
St. Joseph's Hospital
University of Illinois - 1981
Robert J. Willer, M.D.
Family Practice
Good Samaritan Hospital
University of Arizona - 1982
Kimberly Ann Wood, M.D.
Internal Medicine
Good Samaritan Hospital
University of Oklahoma - 1981

Pima

Patrick Birmingham, M.D.
Tucson Hospital Medical
Education Program
Northwestern University

University of Arizona
Health Sciences Center
William D. Brown, M.D.
Occupational Medicine
Uniformed Service University - 1982
Jose I. Duran, M.D.
Obstetrics and Gynecology
University of Arizona - 1981
Paul G. Hurst, M.D.
Internal Medicine
University of Kentucky
College of Medicine - 1983
Alan Rogers, M.D.
Internal Medicine
Baylor University - 1980

Student Members

University of Arizona
College of Medicine
Angela Garcia
Barbara Strawn

ArMA Leadership at the Public Relations seminar

PRINTING

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References.

1. Stone PH Turi ZG Muller JE Efficacy of nifedipine therapy for refractory angina pectoris *Am Heart J* 104 672-681 September 1982
2. Antman E Muller J, Goldberg S et al Nifedipine therapy for coronary-artery spasm Experience in 127 patients *N Engl J Med* 302 1269-1273 June 5 1980

BRIEF SUMMARY
PROCARDIA (nifedipine) **CAPSULES** For Oral Use

INDICATIONS AND USAGE I. Vasospastic Angina PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria 1) classical pattern of angina at rest accompanied by ST segment elevation 2) angina or coronary artery spasm provoked by ergonovine or 3) angiographically demonstrated coronary artery spasm In those patients who have had angiography the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina provided that the above criteria are satisfied PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed e g where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and or adequate doses of beta blockers

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and or organic nitrates or who cannot tolerate those agents

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina but available information is not sufficient to predict with confidence the effects of concurrent treatment especially in patients with compromised left ventricular function or cardiac conduction abnormalities When introducing such concomitant therapy care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS Known hypersensitivity reaction to PROCARDIA

WARNINGS Excessive Hypotension Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated occasional patients have had excessive and poorly tolerated hypotension These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers

Severe hypotension and or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker but the possibility that it may occur with PROCARDIA alone with low doses of fentanyl in other surgical procedures or with other narcotic analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated the physician should be aware of these potential problems and if the patient's condition permits sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery

Increased Angina. Occasional patients have developed well documented increased frequency duration or severity of angina on starting PROCARDIA or at the time of dosage increases The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate or from increased demand resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina probably related to increased sensitivity to catecholamines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is important to taper beta blockers if possible rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure: Rarely patients usually receiving a beta blocker have developed heart failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS General Hypotension Because PROCARDIA decreases peripheral vascular resistance careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested Close observation is especially recommended for patients already taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema: Mild to moderate peripheral edema typically associated with arterial vasodilation and not due to left ventricular dysfunction occurs in about one in ten patients treated with PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuretic therapy With patients whose angina is complicated by congestive heart failure care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers The average increase was 45% Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured digitalis toxicity was not observed Since there have been isolated reports of patients with elevated digoxin levels it is recommended that digoxin levels be monitored when initiating adjusting and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis mutagenesis impairment of fertility When given to rats prior to mating nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity in rats embryotoxicity in rats mice and rabbits and abnormalities in monkeys

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness, peripheral edema nausea weakness, headache and flushing each occurring in about 10% of patients transient hypotension in about 5% palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication Additionally the following have been reported muscle cramps, nervousness, dyspnea nasal and chest congestion, diarrhea constipation inflammation, joint stiffness, shakiness sleep disturbances blurred vision difficulties in balance dermatitis pruritus, urticaria, fever sweating chills and sexual difficulties Very rarely introduction of PROCARDIA therapy was associated with an increase in anginal pain possibly due to associated hypotension

In addition more serious adverse events were observed not readily distinguishable from the natural history of the disease in these patients It remains possible however, that some or many of these events were drug related Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare mild to moderate transient elevations of enzymes such as alkaline phosphatase CPK LDH SGOT and SGPT have been noted and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy is uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis possibly due to PROCARDIA therapy has been reported twice in the extensive world literature

HOW SUPPLIED: Each orange soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069 2600-72) and unit dose (10x10) (NDC 0069-2600-41) The capsules should be protected from light and moisture and stored at controlled room temperature 59 to 77 F (15 to 25 C) in the manufacturer s original container

More detailed professional information available on request

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"I can do things that I couldn't do for 3 yrs. including joining the human race again."

Quotes from an unsolicited letter received by Pfizer from an angina patient.
While this patient's experience is representative of many unsolicited comments received, not all patients will respond to Procardia nor will they all respond to the same degree.

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"My daily routine consisted of sitting in my chair trying to stay alive."

"My doctor switched me to PROCARDIA[*] *as soon as it became available. The change in my condition is remarkable."*

"I shop, cook and can plant flowers again."

"I have been able to do volunteer work...and feel needed and useful once again."

PROCARDIA can mean the return to a more normal life for your patients—having fewer anginal attacks,[1] taking fewer nitroglycerin tablets,[2] doing more, and being more productive once again.

Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).

for the varied faces of angina

PROCARDIA®
(NIFEDIPINE) *Capsules 10 mg*

*Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
2) Angina where the clinical presentation suggests a possible vasospastic component.
3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Please see PROCARDIA *brief summary on adjoining page.*

Motrin®

ibuprofen, Upjohn

600 mg Tablets

More convenient for your patients.

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J-4044 January 1984

Continued from page 187

Library personnel offers assistance serving as interpreters for emergency calls from Spanish speaking individuals. The calls can be local, from some community throughout the state, or from across the border. The use of the various drug indexes and other material in Spanish becomes extremely helpful at this time, since a significant number of calls from this group are received.

The APDIC offers a number of lectures and programs that are also attended by Library members, mostly by those involved in collection development, acquisitions and serials, since they provide a wonderful opportunity to gain insight into the nature of their work, and assist us in the selection process. These programs are highly instructive and informative, and serve as valuable Continuing Education courses to enrich the background of those who participate in them.

The APDIC has developed a number of brochures on poison prevention techniques, both in English and Spanish, and has used the Library on different occasions to stage attractive and informative exhibits. They range from a large display of household products that can be lethal in the hands of children, to a fabulous array of poisonous and venomous animals, (colorful snakes, spiders, scorpions, etc.), which have added a touch of pizazz to the otherwise sedate atmosphere of the Library.

If a pharmacological term had to be selected to describe the relationship between the Library and the Arizona Poison and Drug Information Center, *synergistic* would be the appropriate choice. They both will continue to grow and support each other for the benefit of all members of the AHSC, the physicians and health workers of Arizona, the community in general, and our friends across the border.

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Medical History

Extracts from the Publications of the Arizona Medical Association

(Continued)

John W. Kennedy, M.D.

We continue highlighting the history from the publications of the Arizona Medical Association and this is the ninth installment beginning with the year 1936, from *Southwestern Medicine.*

News Items 1936

The Miami Inspiration Hospital was reopened by Dr. John E. Bacon, January 1, 1936. Dr. Ira E. Harris, formerly physician to the Phoenix Transient Camp under the Maricopa County Welfare Board joined Dr. Bacon in Miami.

Dr. George Le Berge moved from Payson to Peoria leaving Payson without a physician.

The Yavapai County Medical Society reinaugurated its Post Graduate Study Club and met in Jerome. Dr. A. C. Carlson and staff-surgeons at the United Verde Copper Company Hospital were the hosts. Attending were Drs. E. A. Born, James Allen, John W. Flinn, M. S. Gaede, R. K. Hilton, H. T. Southworth, H. C. Heim, R. N. Looney, J. P. McNally, C. R. K. Sweetman, John Taylor, C. E. Yount and C. E. Yount, Jr. (*The drive over Mingus Mountain in those days was not exactly a thirty minute trip, but remember the Yavapai County Society was proud of its great geographical area and the wide distances from which its members traveled to continue their postgraduate study meetings.)*

A First in Arizona—
Care of the Indigent in Gila County

In lieu of treating indigent patients, physicians may have private patients in the Gila County Hospital. This was unique and only three other hospitals in the nation had this custom. The County Hospital at San Luis Obispo, California was the most Western hospital. Membership on the staff was determined by recommendation from the medical staff to the Board of Supervisors. The minimum requirement was the doctor be a member of the Gila County Medical Society. The hospital was undergoing alterations and would soon have a modern operating room. (*This became the custom in many of the smaller county hospitals, that is the custom of having both a private ward and indigent ward. As to whether the doctors continued to treat the indigent patients at no expense to the county for this privilege, and as to how long this endured is not known. It certainly is not the case today, even in those hospitals that have this bifid patient provision.)*

Clubs, Wings and Anna Nettle

The Phoenix Clinical Club again published a series of discussions of the Cabot cases. This clinical club was organized by Warner Watkins in 1928 with twelve original members. But they gave credit to the Yavapai County Society for pioneering in this type of study club as a postgraduate form of instruction.

The Pima County Hospital is adding a new wing. Work is being done by WPA. A warm pool for infantile paralysis victims was planned. A Community Health Center was established at Wilcox under the charge of a nurse. This is part of the WPA Program.

Dr. Anna Israel Nettle came to Arizona three decades ago. She was a native of Baltimore and was graduated from the John Hopkins Medical School. She came to Parker, Arizona in the early thirties and was the only physician for a hundred miles. She assumed duties as a government doctor, first on foot, then on horseback and later in a Government car. She never counted money as of value, never sent a statement. Some patients paid, though not asked, and others never asked or paid. What money she did earn was returned to the Mohave Indians. Two years ago she retired with poor health and now she is buried beside her husband in the Parker Cemetery. (*Another of the unsung selfless physicians of the late frontier*).

Socialized Medicine

Almost every issue now carried some discussion of the possibility of socialized or state medicine and how to combat it. Dr. Browne in an editorial commented that if you are going to socialize medicine, why not socialize groceries. (*Little did Dr. Brown suspect that in time, both would become free*).

Scientific Papers and Boards

There is a series of articles by Dr. Zebud M. Flinn of Prescott on the studies of the nature of leucocytosis consisting of a review of the literature and some of his own experimental results. (*Dr. Zebud Flinn died in 1940 in Puerto Rico where he was associated with the School of Tropical Medicine*).

It was reported that Dr. Bric Pomeroy Storts of Tucson was now a licentate of The American Board of Pediatrics. Of the thirty-one who took the examination only twenty-five passed. *(Wonder what the pass rate is now in 1984?)*

The Purpose

Dr. O. H. Browne, beginning his second year as editor stated again his purposes with the Journal. 1) To publish new facts in the medical field. 2) To give information and facts about the business side of medicine. 3) The cultural side of medicine in which he inaugurated the Annals of Medical History of Arizona and hoped for other contributions from other members. (*This he seldom received*). 4) News department, as he thought physicians are always interested in the doings of their confreres. And more than that, this is of great historical value. He believed that each person should appoint himself a committee of one to send in material. 5) To keep the readers informed about new books by publishing book reviews.

Personal

Dr. W. O. Sweek of Phoenix had been appointed a member of the Board of Regents of the University of Arizona. *(Dr. Sweek was a moving force in establishing the original Gruno Clinic.)*

News Items 1936

Springerville, Arizona is building a new 14 bed hospital.

Dr. C. E. Duvall of Tucson had his license revoked by the Board of Licensure.

Dr. R. D. Kennedy has been elected chief of staff of the Gila County Hospital.

Dr. R. W. Hussong, the Phoenix City Health Officer, had the health personnel fitted out in white uniforms with a coat lapel bearing special insignia. The City of Phoenix Health Department had closed five milk distributors and one milk plant due to persistent unsanitary conditions.

Pneumonia was still a killer and Dr. O. H. Browne of the Phoenix Clinic presented a paper of "Quinine intravenously for Pneumonia." He stated that there was a high degree of toxicity of quinine to the pneumococcus if it was given within 24 hours of the onset of the disease and then discontinued 24 hours after the temperature became normal or else they were likely to relapse. He advised that in desperately ill patients give 105 grains in 15 grain doses intramuscularly every six hours. (*You will recall that other physicians were using pneumothorax in the treatment of pneumonia*). (*As a resident in radiology about this time we were treating acute pneumonia with small doses of x-*

radiation. But we were treating only those cases in which there was no matching pneumococcus anti-serum. The advent of sulfa drugs eclipsed all of this).

It was reported that Dr. David Davis of Phoenix had won a $50,000 malpractice suit which had been placed against him. It was also reported that a physician from California testified against Dr. Davis. (*This seemed to set the pattern for I recall that in the late sixties this same thing occurred again. A local doctor had a California doctor testify against him in a malpractice suit.)*

At last the Basic Science Bill passed the Arizona Legislature and carried an emergency clause so that it went into effect very quickly.

Yuma County erected a new hospital costing $40,000. It had eleven private rooms, one four bed ward, two two bed wards and was modern in every respect.

Dr. Robert S. Flinn was elected President of the Maricopa County Medical Society.

On June 15, 1936 it was reported that the American Board of Internal Medicine had been organized with Walter L. Bierring, M.D. of Des Moines as Chairman. The examination fee was to be $40.

G. F. Manning, M.D. was named director of the Gila County Health Unit.

The 8th Annual Training Course for Medical Department Reservists of the Army and Navy was held at the Mayo Foundation, October 4-17, 1936.

Dr. Joseph Madison Greer flew to Ganado to the Harlow Brooks Memorial Clinic Conference. Thirty physicians were present.

The following doctors were on duty at the Arizona National Guard Medical Department exercises at Fort Alexander M. Tuthill encampment near Flagstaff, they were Dr. F. P. Perkins, and Dr. Alvin Kirmal of Tucson, and Dr. James Reddin of Casa Grande.

Sir Henry Wellcome died in London. He was an American by birth and Dr. W. W. Mayo "the father of the famous brothers" encouraged him to study pharmacy. He graduated from the Philadelphia Pharmacy College in 1868. He was sent to London to represent an American drug firm. Later with Silas M. Burroughs he established the Burroughs-Wellcome Company. He became a British subject during World War I and was knighted in 1932.

Dr. George Truman, superintendent of the State Health Department announced that a new Public Health Unit would be set up in Yuma County with the funds provided by the Federal Government.

As a result of a resolution of the Pima County Medical Society, the Tucson doctors closed their offices Saturday afternoons during the summer months.

The Industrial Relations Board assigned to the Industrial Commission was composed of physicians appointed by the President of the state medical Association. Their function was to promote understanding and cordial relations with the Industrial Commission. It principally considered matters brought to the commission by individual doctors, by the County Society, or by the committee itself and was organized in 1934. This Board is not to be confused with the Medical Rating Board which grew out of this Industrial Relations Board but was not related.

Dr. R. W. Hussong was the Phoenix City Health Officer. George Truman was Superintendent of Health. Norman Ross was the County Health Physician for Maricopa County.

The Indian Bureau through PWA was building an Indian Hospital at Yuma, Arizona.

The Arizona Public Health Association meeting elected Dr. A. W. Crains President, who was currently the Director of the Maricopa County Health Unit.

The AMA had constant opposition to any group of consumers or providers who banded together to provide medical care. Dr. Michael A. Shadid, in the fight to establish a cooperative hospital—the first in the United States—at Elk City, Oklahoma, had to take on the State Medical Association. In 1936 he was summoned before the Board of Medical Examiners to answer charges of advertising, fleecing the public, and soliciting patients. For setting up a group practice, Drs. Donald Ross and H. Clifford Loss were expelled from the Los Angeles County Medical Society. Members of the Group Health Association of Washington, D. C. started in 1937 and a Group Health Co-Operative of Puget Sound, Seattle, 1946 brought organized medicine into the courts of law. (*Reference American Medicine and the Public Need, page 188.*)

News Items 1937

A tribute to Carlos Montezuma was written by O. H. Browne, M.D. and the last days of *Carlos Montezuma* was written by Dr. R. J. Stroud, Tempe. Also a reprint from the *Arizona Republic* was published, written by a woman whose father had befriended Carlos and had attended him in his last days.

The Lamoreaux Hot Springs of Tonopah, Arizona, eighteen miles northwest of Hassayampa had an advertisement touting their facilities. *(As of this date, 1984 this old hotel is being rejuvenated and the hot springs hopefully will become popular again.)*

An iron lung, or better known as a Drinker Respirator, was donated by the Pay-N-Take-It Markets to the State Health Department to be used in hospitals where this apparatus was not affordable. Its most frequent use was for poliomyelitis cases.

At a medical staff meeting of St. Joseph's Hospital in Phoenix, October 11. Drs. Clyde Barker, Angus J. De Pinto, Wayne Fountain and Baynard Neff were approved for membership on the visiting staff.

Dr. Orville Harry Browne retired as editor of *Southwestern Medicine* and was succeeded by Dr. M. P. Spearman.

The Pima County Hospital was completed and had its equipment. Who was to pay for it might take another meeting of the state Legislature, there seemed to be a local disagreement about it. It was built by WPA funds.

It was stated that Hospital Group Insurance first began at Baylor University Hospital in Dallas, Texas in 1929 with 1500 schoolteachers enrolled. Now similar plans operated in sixty cities with 500 hospitals patronized by the budgeteers.

Dr. R. W. Hussong relinquished his position as city physician for Phoenix, September 15, 1937.

Dr. C. E. Yount of Prescott demonstrated a new folding automobile litter to transport fracture cases or those who were suspected of a spine fracture, especially. This was demonstrated at the Northern Arizona subcommittee on fractures of the American College of Surgeons, July 1937.

Dr. R. N. Looney came to Arizona in 1896 and built one of the first private hospitals in McCabe for mine and railroad patients. He brought the first x-ray machine to Prescott in 1900. It was a large clumsy static machine and a few years later a "Rose Coil" was owned by he and Dr. Yount.

Dr. Coyt Hughes, State Superintendent of Health appointed a committee to control venereal disease. H. D. Ketcherside, H. M. Purcell of Phoenix and W. D. Shultz of Tucson were to set up three VD clinics in the State.

Dr. S. D. Swope of El Paso, Texas in an article on "Memory Lane, Fifty Years in Medicine" had some interesting notes. W. J. Mayo had a small steam boat which plied between Red Wing and Minneapolis. It would go there and back in one day on which there were no telephones, no patients, no outside interference and he frequently entertained on this. Dr. Charles Mayo's hobby was a castle on the Bumbo River.

Time magazine reported that of 1864 drug addicts, 1048 have been "cured" at the Lexington Narcotic Farm. (*And with statements like this the Public Health Service began to lose its credibility.)*

Dr. C. J. Salsbury of Ganado, Arizona discussed the disease incidence among the Navajos during the 1931-1935 years. There were 4,826 admissions. 1) influenza, 2) trachoma, 3) tonsillitis, 4) tuberculosis and 18 gallbladder disease.

The Medical and Dental Finance Bureau, Inc. of Phoenix and Tucson was noted to be one year old. At this time the bureau had paid about $30,000 to professional men and showed a steady growth. This enabled the patient to pay small monthly installments to meet his medical and dental bills.

The Yuma County General Hospital was completed at a cost of $40,000 with thirty-one beds, an operating room and X-ray adjoining. The old hospital continued in use.

Dr. R. D. Kennedy of Globe reported on the orthopedic situation in Arizona. He stated that clinics were held in various locations in the State and 403 children were examined. 1) Congenital hips, 24 cases. 2) Other congenital deformities, 45 cases.

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

LEGISLATIVE COMMITTEE

The Legislative Committee met on January 14, 1984.

Consideration of Printed Bills

H.B. 2002 Hospital Trauma Centers

The Director of the state health services department would have the authority to designate hospitals as level-one trauma centers in accordance with criteria developed by the division of emergency medical services. It was moved and carried to actively study H.B. 2002.

H.B. 2027 Driving while intoxicated; alternative sentence

The law no longer would allow a judge to suspend part of a drunk-driving sentence if the defendant paid a fine of at least $250. Committee decided that a recommendation for therapy and counsel was needed from the medical arena. It was moved and carried to actively study H.B. 2027.

H.B. 2045 Safe Highway Act

It would be illegal to drive a car that is required to have integrated lap and shoulder belts without using them, except under certain conditions. Also suggested, some sort of legislation to include safety features on head rests. It was moved and carried to actively study H.B. 2045.

H.B. 2046 Abortion; viable fetus; requirements; exemptions

The current requirement for attempting to save the life of the fetus would be expanded. The prohibition of using any fetus for experimentation would be limited to human fetuses and embryos. It was moved and carried to offer general support for H.B. 2046.

H.B. 2048 Medical treatment decisions; death determination

A "medical treatment decision act" would be added to the state health code to establish a legal means for a person to direct that his dying not be artificially prolonged. A definition of death would be provided. It was moved and carried to refer H.B. 2048 to a subcommittee.

H.B. 2060 Small group homes; three-year program

A three-year program under which small group homes, defined as residential health care institutions providing supervisory care to ten or fewer persons, could operate without the otherwise required state licensing would be undertaken. It was moved and carried to offer active nonsupport for H.B. 2060.

S.B. 1009 Telecommunication devices for the deaf

The emergency telecommunication services program would be expanded to include providing special devices for persons who are deaf or have severe hearing or speech problems. It was moved and carried to take no action on S.B. 1009.

S.B. 1012 Uniform contribution among tortfeasers

If two or more persons were liable for the same damage to another person or to property, none of the liable persons could be compelled to pay more than his own rata share of the entire liability. It was moved and carried to offer general support for S.B. 1012 without the comparative negligence section.

S.B. 1017 Naturopaths; designation; initials

The prohibition of an unlicensed person's pretending to be a naturopath would be expanded to forbid a licensed naturopath pretending he is licensed to practice another healing art. It was moved and carried to offer active support for S.B. 1017.

S.B. 1025 Drinking age; twenty-one

S.C.R. 1003 Referendum; drinking age; twenty-one

The legal drinking age would be raised to 21 from 19. It was moved and carried to offer active support for S.B. 1025 and S.C.R. 1003.

S.B. 1030 Paternity; tissue tests; liability

Tissue tests would have the same legal standing as blood tests in paternity suits. It was moved and carried to offer general support for S.B. 1030.

H.B. 2013 Medical costs; subrogation

If a health insurance company was required by contract to furnish medical benefits to a person under circumstances creating liability to a third party, the company would have the same right as a government health plan to recover the cost from the third party. It was moved and carried to offer nonsupport for H.B. 2013.

H.B. 2069 Schools; protection of pupils' rights

It would be illegal to require a student to submit to a psychiatric or psychological exam designed to reveal information about politics, sexual behavior, illegal behavior or any potentially embarrassing problems. It was moved and carried to offer nonsupport for H.B. 2069.

H.B. 2074 Sale and regulation of milk

Law allowing the sale of a final consumer of butter and cheese made from pasteurized manufactured milk or cream would be revised to allow sale of any manufactured milk products made from manufacturing milk. Stricter labeling requirements would be imposed on raw milk and raw-milk products. Committee decided to wait until a report would be forthcoming from the Department of Health Services. It was moved and carried to take no action H.B. 2074 pending a recommendation from ADHS.

H.B. 2087 Corrections multiple use fund

Taxes on hard liquor and beer would be increased by 25 cents a gallon and 12 cents a gallon respectively, and the revenue from the increase would be put in a new "corrections multiple use fund" to be spent on various corrections-related programs. It was moved and carried to actively study H.B. 2087.

S. B. 1044 Medical doctors; continuing education; repeal

Statutory requirements for continuing medical education for medical doctors would be repealed. Committee suggested that continuing education requirement for various specialty groups be looked into. It was moved and carried to actively study S.B. 1044.

S.B. 1053 Sexual assault; expenses of investigation

Instead of being paid by the county where the assault occurred, expenses connected with securing evidence in a sexual assault case would be paid by the agency requesting the examination. It was moved and carried to take no action on S.B. 1053.

Physician's Assistants

The main concern of the committee was the necessity for the formation of a duplicate board in which physicians would have less control. BOMEX indicated that the problems they were having were administrative and the committee agreed that if the Committee's make-up could be resolved, they would approve it. It was moved and carried to offer general support to a bill to create a separate committee to regulate physician's assistants.

Hospital Regulation

Dr. Kurtz explained the activities of a subcommittee meeting on Health Care Cost Containment. After lengthy discussion, It was moved and carried that the Legislative Committee recommend to the Board of Directors that the attached statement relating to health care cost containment be adopted as a position of the Arizona Medical Association. (A copy of the statement can be obtained from the Arizona Medical Association office).

Baby Doe Legislation

H. Belton P. Meyer, M.D. told the committee that a subcommittee had worked many hours on this subject and had come up with a model bill for bioethical review committees in hospitals. New federal guidelines were published this weekend which preempted most of the subcommittee's work. The Legislative Committee was presented with a draft proposal which was designed to bring Arizona's current "Baby Doe" legislation (H.S. 2209- 1983) into conformity with the new federal guidelines. It was moved and carried to recommend the attached draft proposal to the Board of Directors for approval as the Association's position on Baby Doe legislation. (A copy of the statement can be obtained at the Arizona Medical Association Office).

EXECUTIVE COMMITTEE

The Executive Committee met Friday, anuary 20, 1984.

Mr. Mathis, Director of the Department of Health Services, updated the committee on AHCCCS activities, including the announcement that Dr. Schaller has been appointed as Medical Director for McAUTO and extreme concern about the recent barrage of adverse publicity on the AHCCCS program which, in all actuality, is beginning to work quite well. Comment was made regarding the ongoing process of redesigning divisions within the Department, the recent appointment of Dr. John Stafford as Director of Emergency Services, and the preoccupation of the Department with the Nutri-Sweet issue.

The committee was informed that, due to the conflict with the AMA National Leadership Conference being held in Chicago February 23-25, 1984, the date for the February meeting of the committee had been changed to February 17, 1984, at 6:30 p.m.

ArMA's second, most recent, offer to William R. Hogan of Phoenix Newspapers, to assist the Arizona Hospital Association and the Arizona Coalition for Cost Effective Quality Health Care in their negotiations relative to lowering of health care costs in Arizona was received.

Following a discussion of the determination by the Health Manpower Committee that it was not, in fact, the appropriate committee to develop a rural health program and the recommendation that a separate Ad Hoc Committee for Rural Health be created. It was moved and carried to establish an Ad Hoc Committee on Rural Health which would be responsible for studying health problems in the rural areas as well as developing programs to assist in solving those problems.

The committee discussed committee membership by other than ArMA members in light of the choice by various counties for voluntary membership in all three levels and it was determined that this matter be left to the discretion of the President during the process of his 1984 committee appointments.

The committee received and discussed a letter received from Monty Roth, M.D., relating to the assessment for the building fund sent to new members. The members being fully aware of the problem this does present in solicitation of members but realizing that these funds are used for the ongoing maintenance of the building and, therefore, necessary, determined to write Dr. Roth to seek any comments or suggestions he might have on how this situation might better be handled. Additionally, it was moved and carried to refer the matter of the Building Fund Assessment to the Finance Committee, asking that it review the necessity for these funds within the annual budget compared to the potential loss of membership due to the assessment and make its recommendation back to the Executive Committee.

Resolutions relating to policies established by ArMA's House of Delegates were reviewed and discussed by the members, and it was moved and carried to recommend to the Board of Directors that the resolutions attached hereto and by reference incorporated herein relating to the establishment of a resolution review policy within the Association Bylaws and the appointment of an Ad Hoc Committee to review and update previous ArMA policies be proposed during the 1984 Annual Meeting of the House of Delegates. (A copy of the resolution can be obtained at the ArMA office).

A brief discussion was held regarding the possibility of including an AMA slide presentation during the opening session of the 1984 meeting of the House of Delegates and it was determined to seek outside funding for the cost of same and, if successful, proceed to make arrangements with the AMA for the presentation, equipment and an operator.

BOARD OF DIRECTORS

The Board of Directors met January 21, 1984.

Auxiliary Activities Report

Mrs. Lisboa, President of the ArMA Auxiliary, addressed the Board, stating that, in lieu of a lengthy report, she had brought extra copies of their newsletter for dissemination. She did, however, bring to the Board's attention the fact that Mrs. Lawrence Shapiro had recently been named "Woman of the Year," that the Auxiliary is actively working with legal counsel to revise their articles and bylaws to permit greater legislative activities, that they have moved into their new offices in the ArMA building and are looking at the possibility of hiring part-time secretarial help, that consideration is being given to an administrative change from a Board of Directors to a House of Delegates format, and that in their work in caring for the elderly, they are in need of physician support and would appreciate any assistance in finding doctors who are agreeable to make house calls.

The Board received and discussed Report D of the AMA Council on Scientific Affairs (Nonsmoking in Hospitals) in conjunction with a recommendation from Dr. Loffer that ArMA recommend to the Arizona Hospital Association that it adopt the recommendations of such report and encourage its member hospitals to follow them. It was moved and carried that the ArMA Board of Directors recommend to the Arizona Hospital Association that it adopt the recommendations contained in Report

Arizona
Medicine

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D (I-83) of the AMA Council on Scientific Affairs (nonsmoking in hospitals) and encourage its member hospitals to follow them.

Report of ArMPAC membership status, solicitation activities and appeal for all Board members to attend and participate in the February 18, 1984 ArMPAC/AMPAC seminar at the Association headquarters. Received.

Letters of appreciation for grants from the Benevolent and Loan Fund Committee were received from Michael Earl, Robert Johnson, and Barbara Strawn (Tekniepe).

Specialty Society Representation - House of Delegates. It was moved and carried to submit resolutions dealing with specialty society respresentation in ArMA's House of Delegates, one of which would provide for a bylaws change to include national boards recognized as primary or *conjoint* boards by the American Board of Medical Specialties and one which would allow granting of representation in the House by the Arizona Society of Allergy, both of such resolutions being attached hereto marked exhibits "A" and "B", respectively, and incorporated herein by reference. (A copy of these resolutions may be obtained at the Arizona Medical Association office).

Letter of 12/13/83 was received advising of the decision by the Yavapai County Medical Society to no longer require membership in ArMA as a prerequisite to membership in the county society, as well as Dr. Christ's information that the Yuma County Medical Society had taken like action during its December meeting.

Fifty-Year Club Membership. It was moved and carried to approve the following physicians for membership in the Fifty-Year Club of the Association: John S. Baker, M.D., Sam W. Banks, M.D., Paul H. Case, M.D., John L. Cogland, M.D., Yukio Miyauchi, M.D., Robert T. Phillips, M.D. and Paul L. Singer, M.D.

Following this membership approval, the Board discussed at length the wording of the bylaws as it relates to this category of membership, and it was moved and carried to refer Chapter II, Section 3 (B), of the Association Bylaws, relating to the requirements for elevation to Fifty-Year Club Membership, to the Articles of Incorporation and Bylaws Committee, requesting that it consider a change in that portion of the Bylaws by the deletion of the word "active," so that *All* categories of membership could, in fact, be considered by the Board.

Louis J. Kettel, M.D., updated the Board on the activities at the College of Medicine, which included comment on the number of medical school applicants, the recent acquisition of Kino Community Hospital, legislation which will be proposed to change the present system of budgeting for University Hospital (for which he solicited ArMA's support), legislation which, if passed, would prohibit the use of stray animals for research and teaching, and the proposed cigarette tax which would benefit the Cancer Center.

Mr. Robinson reported on matters of interest considered by the Board of Directors of the Arizona Hospital Association during its meeting on November 2-3 and December 16, 1983. Mr. Reid Wood commented on the January 19-20 ArHA meeting, soliciting ArMA's assistance in seeking solutions to the ongoing problems between ArHA and the Coalition. Mr. Wood was informed of ArMA's continued willingness to help, offers had been extended on two previous occasions, and no response had been received.

Executive Committee: It was moved and carried to approve and ratify the minutes of the Executive Committee meetings held on October 29, 1983 and November 18, 1983.

Governmental Services Committee

The Board received the recommendation of the Governmental Services Committee that an ad hoc committee be established to investigate and study the sodium content in the American diet and to formulate a formal position by the Association pertaining to salt reduction. Additionally, the Board received written and oral comments from Louis C. Kossuth, M.D. relating to the problem and the planning for an effective research program. Concern was expressed regarding the financial burden such a committee and its activities would place upon the Association budget, at which point Dr. Kossuth assured the members that, with the exception of start-up money for the committee's work, he would proceed to contact outside groups, including the ArMA Auxiliary, for grants or other financial or staff support. It was moved and carried to approve the formation of an ad hoc salt reduction committee to be chaired by Louis C. Kossuth, M.D., and to request the finance committee to find seed money to provide staff support and initiate the program contemplated by such ad hoc committee and, further, to request Auxiliary support and participation in such program.

Dr. Linkner, Chairman of the Health Manpower Committee, presented to the Board that committee's recommendation that ArMA support a proposal by the Statewide Council on Nursing which calls for the establishment of nurse/physician committees within the organizational structure of Arizona hospitals and, following a lengthy discussion, wherein concern was expressed that such committees might, in fact, preempt the role and activities of hospital medical staffs. It was moved and carried that the recommendation of the Health Manpower Committee relating to a proposal by the Statewide Council on Nursing for establishment of Nurse/Physician committees in hospitals be referred to the Hospital Medical Staff Section for its deliberation, consideration, and recommendation back to the Board of Directors.

It was moved and carried to confirm the appointment of Neil O. Ward, M.D. as a member of the Ad Hoc Indigent Health Care Committee for the term 1984-85.

Legislative Committee: Constitutional Initiatives

The Board received and reviewed the constitutional initiatives which have been filed by the Arizona Coalition for Cost Effective Quality Health Care, the Coalition's most recent brochure entitled "Arizona's Health Care Crisis: The Problem and Solution," as well as correspondence relating to this issue from the Arizona Hospital Association (1/9/84), the lawfirm of Lewis and Roca (11/15/83) and the lawfirm of Snell and Wilmer (11/15/83), following which Dr. Kurtz, Chairman of the Legislative Committee, addressed the Board regarding that committee's recommendation on January 14, 1984, of a statement relating to health care cost containment to be adopted as a position of the Arizona Medical Association. Following additional comment and discussion; it was moved and carried that the Arizona Medical Association supports a renewed effort by all responsible parties, including government, employers, consumers, organized labor, physicians, hospitals and their governing boards, to address the problems of the escalation of health cost and to establish goals for a strategy for solutions. It was moved and carried that the Arizona Medical Association opposes the present initiative offered by the Industry Coalition, such opposition being based on (A) the questionable adaptability and unproven effectiveness of this approach for the State of Arizona and (B) the inappropriateness of its implementation via a constitutional amendment. The Board expressed the desire that this position be forwarded to the members and that the members be apprised of the Board's intention that the first action take absolute priority; that any activity on the second action of the Board only take effect if all efforts to accomplish the first failed.

"Baby Doe" Legislation

The members received, reviewed and discussed various documents pertaining to "Baby Doe," including a memorandum from Snell and Wilmer, a recent issue of *Medicine and Health Perspectives*, and a draft of a subcommittee recommendation for proposed legislation to be considered by the Legislative Committee during the meeting on 1/14/84, together with recommendation coming out of that committee meeting and amendments thereto for approval as ArMA's position on the "Baby Doe" legislation. It was moved and carried that the draft proposal of "Baby Doe" Legislation of the Legislative Committee, together with the amendments thereto submitted by the legislative subcommittee, when incorporated into one complete document, be the official position of the Arizona Medical Association on "Baby Doe."

It was moved and carried to confirm the appointment of Robert V. Stephens, M.D. as a full member of the Legislative Committee for the term 1984-87.

Medical Education Committee - CME Rules and Regulations

The recent activity by the Board of Medical Examiners to remove the requirement for reporting of CME Category I hours and provide for a random check of physicians prior to renewal of license, together with ArMA's continued activity in this area, was discussed at great length by the Board and it was moved and carried to refer the matter of the necessity of ongoing accreditation for continuing medical education by the Association to the Legislative Committee for its review and consideration in light of any repeal legislation which might be proposed during the session.

A report was received of CME programs accredited for Phoenix Indian Medical Center, Desert Samaritan Hospital and Health Center, St. Luke's Medical Center and Blood Systems, Inc.

Membership Committee, Ad Hoc

Reports were received from Misty Coumbe relative to numbers of physicians, within Maricopa County, who had opted for county or state only membership together with a comparison of total ArMA membership as of 12/31/82 and 1/20/84.

Dr. Ward spoke briefly, expressing appreciation for the help and assistance which had heretofore been given by staff and ArMA members and stressing the importance of continued one-on-one contact with those physicians who have not as yet paid state, but have paid county, dues.

Professional Committee

The report of Dr. Charles Henderson regarding his presentation to the Governor's Advisory Council on Aging and the Study Commission on Long Term Care, together with the suggestion by the Professional Committee that ArMA commend and encourage Dr. Henderson in such participation, and it was moved and carried to commend Dr. Charles E. Henderson for his efforts in testifying in ArMA's behalf for the Governor's Advisory Council on Aging and the Study Commission on Long Term Care and to encourage his continued participation.

Following a review and discussion of the Professional Committee's recommendation of 11/16/83 that the Level I Trauma Centers in Maricopa County be limited in number. It was moved and carried to accept the Professional Committee's recommendation of 11/16/83 relating the limitation of Level I Trauma Centers for information.

The recommendation by the Executive Committee that the Board propose resolutions to the 1984 Annual Meeting of the House of Delegates which would establish review procedures for all previous and future resolutions and policies of the Arizona Medical Association was considered by the Board and, it was moved and carried that the Board of Directors submit to the 1984 House of Delegates' meeting the resolution dealing with "Gatekeeper" influence on cost and quality of health care attached hereto marked "E" and by reference incorporated herein, and that, thereafter, the same resolution be submitted to the American Medical Association. (Copy of the resolution may be obtained at the Arizona Medical Association office).

Report by Dr. Philip Levy was received on the March 21, 1984 "Current Perspectives" program on Diabetes.

The Board expressed sadness and a sense of loss at the recent passing of Dr. Abe Podolsky.

NOMINATING COMMITTEE

The Nominating Committee met on January 21, 1984.

The committee received for information and use in its deliberations a list of members of the Board of Directors, the Delegates and Alternate Delegates to the 1984 Annual Meeting received to date, lists of county medical society presidents for the years 1980-1984, a list of female physicians currently serving on committees as well as those who would, if nominated, be eligible for election, a list indicating counties from which previous presidents had originated and the responses received to the solicitation to county medical and specialty societies for candidate recommendations.

All documents were revised in conjunction with the slate of openings to be filled by the committee and, following deliberation and discussion, it was moved and carried to approve the 1984 slate of candidates for offices to be filled during the April Annual Meeting of the House of Delegates as set forth on Exhibit "A" attached hereto and by this reference made a part hereof. (A copy of this reference may be obtained at the Arizona Medical Association office).

During the selection of candidates for the position of Speaker of the House and being fully aware of the importance of such position and the fact that Dr. Price had served as such for a number of years and would, in all likelihood, determine one day to not accept such nomination, It was moved and carried to recommend to the Board of Directors that it consider grooming a particular physician, possibly by way of attendance at AMA Meetings and Seminars designed for public speaking and/or parliamentary procedures, to be considered for the position of Speaker of the House in the years to come.

In addition, the chair suggested that the Executive Vice President speak personally with Dr. Price for two reasons: 1) to assure him that the committee was completely satisfied with past performance and was most pleased with Dr. Price's willingness to accept the position again if elected, and 2) to inquire of Dr. Price if he would give some thought to the process of planning for his eventual replacement's training.

The members, knowing full well the difficulty of the task of selecting leadership candidates and being particularly aware of the problems confronting the chairman who, as Past President, does not previously serve on the committee discussed the possibility of having the President serve as a member during his term as such so that he could be more familiar with the process when, in fact, he assumed the chairmanship the following year. Because the President makes all committee appointments, it was determined that such membership could simply be handled in this fashion, without necessity of a bylaws amendment.

The committee discussed at great length the difficulties which are confronted in selecting nominees from outlying areas in that many of the positions are time consuming by virtue of meetings, etc., as well as the ongoing need to involve the medical profession with as broad a geographical distribution as possible, the general consensus being that there were positions of importance and in the line of progression which could be more easily assumed by leadership from the smaller counties. The chair specifically suggested a reminder be presented yearly, pertinent to the specific offices more suitable for the outlying county representatives, as some of these offices do not change yearly. For example, next year's Nominating Committee will be responsible for selecting candidates for Treasurer which is a two-year position which could be readily fulfilled by an outlying representative and which could also lead into the progression of offices. The chair also felt a yearly anticipatory note (not a recommendation) would be in order as it was pointed out at the committee meeting a recent tendency for the offices to be primarily selected from the metropolitan areas. No value judgment was placed upon this observation.

Draft Guidelines for use in the selection of nominees was received.

ArMPAC BOARD OF DIRECTORS

The ArMPAC Board of Directors of the Arizona Medical Association met February 9, 1984.

The 1984 ArMPAC membership to date is 332 members. More are expected to join as a result of the solicitation letter which was mailed out on February 6, 1984.

Kevin Walker gave an oral report in the absence of the Treasurer.

It was agreed to send another solicitation letter in approximately six weeks under the letterhead of Jeffrey A. Singer, M.D. This letter will include pertinent issues pending at the Legislature.

In reply to a request for contributions, it was moved and carried to donate $250 to the re-elect Chris Herstam Committee.

Since the committee has supported the SAF-RIDE Program in the past, it was moved and carried to donate $250 to the SAF-RIDE Program. (Check from Educational Fund).

The resignation letter of William J. Casey, Jr., M.D. was accepted.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

MARCH

Tenth Anniversary Winter Update: 1974-1984
March 16-18. Tucson Marriott Hotel, Tucson. Sponsor: University of Arizona College of Medicine, Arizona State Assn. of Physician Assistants. Contact: Susan Stumpf, PA-C, 630 N. La Cholla Blvd., Tucson, Arizona 85745. Approved for 18 hours of Category 1 credit.

Tenth Annual Maricopa Medical Center Urological Seminar
March 17-18. The Cottonwoods, Scottsdale. Sponsor: Maricopa Medical Center. Contact: James H. McDonald, M.D., Chief of Urology Service, 2601 East Roosevelt, Street, Phoenix, Arizona 85008 or Wilfred M. Potter, M.D., Scottsdale Urology Associates, Ltd., 3604 Wells Fargo, Suite B, Scottsdale, Arizona 85251. Approved for 14 hours of Category 1 credit.

Clinical Seminar Series
What's New in the Approach to Anemia
March 17, 1984. University of Arizona Health Sciences Center. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724.

Skeletal Radiology — 1984
March 17-22. The Pointe. Sponsor: Department of Diagnostic Radiology Allegheny General Hospital, Allegheny Health, Education and Research Corporation and Allegheny Radiology Associates, Ltd. Contact: Continuing Education Services, Allegheny General Hospital, 320 East North Avenue, Pittsburgh, PA 15212-9986. Approved for 20 hours of Category 1 credit.

Seventh Annual Pediatric Update
March 20—23. Red Lion's LaPosada Hotel, Scottsdale, Arizona. Sponsor: Phoenix Children's Hospital. Contact: Ronald A. Christensen, M.D., Phoenix Children's Hospital, 1117 East Willetta Street, Phoenix, AZ 85006. Approved for 16 hours of Category 1 credit.

Current Perspectives Seminar—Diabetes
March 21. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85724. Approved for 3½ hours of Category 1 credit.

Gastroenterology of Clinicians 1984
March 21-23. Scottsdale Hilton. Sponsor: University of Arizona College of Medicine and David C. H. Sun Memorial Institute. Contact: Jeanie Sun, 948-1064.

American Academy of Pediatrics
Spring Session Program
March 24-28. Phoenix Civic Plaza. Sponsor: American Academy of Pediatrics. Contact: Jeff Molter, (312) 869-4255 or (800) 323-0797. Approved for hour per hour Category 1 credit.

20th Annual Arizona Chest Symposium
March 29-31. Doubletree Hotel, Tucson. Sponsor: University of Arizona College of Medicine. Contact: Sandy Younker-Hellman, R.N., B.S.N., Symposium Coordinator, P.O. Box 42195, Tucson, Arizona 85733. Approved for 20 hours of Category 1 credit.

Mutual Support Group Conference
March 30. St. Luke's Medical Center, Phoenix. Sponsor: Service League of St. Luke's Medical Center. Contact: St. Luke's Volunteer Services Office, St. Luke's Medical Center, 525 North 18th Street, Phoenix, AZ 85006.

Attend the

ARIZONA
MEDICAL ASSOCIATION

93rd Annual Meeting

April 26—28, 1984

Scottsdale Conference Center
7700 East McCormick Parkway
Scottsdale, Arizona

APRIL

Update: Primary Care 1984
April 3-6. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

Obstetrical Challenges of the 1980's
April 5-7. Mountain Shadows Resort, Scottsdale. Sponsor: Good Samaritan Medical Center. Contact:.Deborah Cesena, Good Samaritan Medical Center, P. O. Box 2989, Phoenix, AZ 85062. Approved for 16 hours of Category 1 credit.

Population Forum 1984
April 12-14. Sunburst Resort, Scottsdale. Sponsor: Planned Parenthood of Central and Northern Arizona. Contact: Jan Bennett, Planned Parenthood. Approved for hour per hour Category 1 credit.

The Developing Child
April 13. Registry Resort, Scottsdale. Sponsor: St. Luke's Medical Center, Behavioral Health Center. Contact: Christine Campbell, Director of Meetings, St. Luke's Medical Center, 1800 East Van Buren St., Phoenix, Arizona 85006.

10th Annual Sports Medicine Symposium
April 13-15. Hyatt Regency, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 W. Bethany Home Road, Phoenix.

Advances in Pulmonary Medicine & Appropriate Handling of Neurological Emergencies
April 14-21 & April 21-28 (2 part conferences). Lake Powell, Arizona. Sponsors: American Institute of Primary Care Medicine & the University of Arizona, College of Medicine. Contact: EPIC Expeditions, P.O. Box 209, Sun Valley, Idaho 83353. Approved for 24 hours of Category 1 credit.

Neuro-Ophthalmology at the Grand Canyon
April 25-28. El Tovar Hotel, Grand Canyon National Park. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 14.5 hours of Category 1 credit.

Current Perspectives Seminar
The Well Adult and Aging
April 26. Scottsdale. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours Category 1 credit.

Clinical Seminar Series
Diagnosis and Therapy of Cardiovascular Disorders
April 28. Phoenix Hilton. Sponsor University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 credit.

MAY

7th Annual Arizona Patient/Health Education Conference & Arizona Public Health Assn. Spring meeting
May 3-4, Carefree Inn Resort, Carefree, Arizona. Sponsor: Arizona Dept. of Health Services & Arizona Public Health Association. Contact: Az Dept. of Health Services, Office of Health Education at (602) 255-1008. Approved for hour per hour Category 1 credit.

1984 CME CRUISE/CONFERENCES ON LEGAL—MEDICAL ISSUES

Caribbean, Mexican, Hawaiian, Alaskan, Mediterranean. 7—14 days in winter, spring & summer. Approved for 18—24 CME Category 1 credits. (AMA/PRA). Distinguished professors. **Fly roundtrip free on Caribbean, Mexican, & Alaskan cruises.** Excellent group fares on finest ships. Registration limited. Pre-scheduled in compliance with present IRS requirements.

Information:
International Conferences
189 Lodge Avenue, Huntington Station, N.Y. 11746 (516) 549-0869.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology
Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

Gastroenterology for Clinicians
March 21-23, Phoenix Hilton, Phoenix, Arizona. Contact: The Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 17 credit hours for Category 1 credit.

Pituitary Concepts
April 16, 12:00 noon, Support Services Auditorium, Walter O. Boswell Memorial Hospital, Presentor: Raymond Randall, Mayo Clinic. Approved for hour per hour Category 1 credit.

Keeping Abreast: What, When & Why in Diagnostic Breast Imaging
April 19, 12:00 noon. Support Services Auditorium. Dr. Charles Wagoner, Arizona Breast Center, presentor. Approved for hour per hour Category 1 credit.

Neuro-Ophthalmology at Grand Canyon
April 25-28, El Tovar Hotel, Grand Canyon National Park. Contact: Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 14.5 hours of Category 1 credit.

Diagnosis and Therapy of Cardiovascular Disorders
April 28, Phoenix Hilton, Phoenix. Sponsor: University of Arizona College of Medicine. Contact: The Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ, 85724. Approved for 7 hours of Category 1 credit.

Restorative Medicine
May 19, Arizona Health Sciences Center, University of Arizona, Tucson, Arizona. Contact: The Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008.
Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Continued on page 205

Industrial Toxicology:

Medical Management of Acute and Chronic Exposures

April 25-27, 1984
at the Scottsdale Hilton
Scottsdale, Arizona

presentations and workshops led by a distinguished faculty will focus on acute and chronic pulmonary exposures, reproductive hazards, solvents, substance abuse, carcinogens in the workplace, pesticides, hazards to medical personnel, hematotoxins, and more.

Sponsored by **Central Arizona Regional Poison Management Center at St. Luke's Hospital**

Donald B. Kunkel, M.D., Seminar Chairman

For additional information, contact:
Christine Campbell
Director of Medical Meetings
St. Luke's Medical Center
1800 E Van Buren,
Phoenix, Arizona 85006
(602) 251-8402

MARK YOUR CALENDAR

For These Upcoming CURRENT PERSPECTIVES SEMINARS

Presented By
THE ARIZONA MEDICAL ASSOCIATION

March 21, 1984 Wednesday Phoenix	Diabetes Philip Levy, M.D. — Program Chairman
April 26, 1984 Thursday Scottsdale	The Well Adult and Aging Earl J. Baker, M.D. — Program Director

The PM Group
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PROFESSIONAL MANAGEMENT • CONSULTANTS TO PRACTITIONERS

ANNOUNCING TWO TOP LEVEL SEMINARS
For Physicians and Spouses
At Paradise Valley Resort, Scottsdale, Arizona

GEARING UP FOR RETIREMENT WORKSHOP

Full Day Workshop
Thursday, April 12, 1984

Topics Covered
- What Post Retirement Vocational Opportunities Are Available
- How to Notify Patients
- What Details Are Involved in Closing A Practice
- What Tax Issues Are Involved in Closing or Selling A Practice
- Valuing A Practice For Sale
- What Should Your Family Know About Your Office
- How To Handle A Disability
- Social Security Benefits
- Living Adjustments For You And Your Spouse in Retirement

MEDICAL MARKETING STRATEGIES

Full Day Work Shop
Friday, April 13, 1984

Topics Covered
- Introduction to Getting and Keeping Patients
- Positioning
- Understanding Marketing Objectives
- Maximizing Patient Satisfaction
- Pricing Your Services
- Increasing Your Practice Visibility
- Expanding Your Referral Sources
- Increasing Your Availability to Patients

MEDICAL COLLECTIONS MANAGEMENT WORKSHOP at Paradise Valley Resort, Scottsdale, AZ. For your office assistants - Wednesday April 11, 1984. Half day session for $65. Write or telephone collect for details.

The Faculty
Both workshops will be conducted by professionals of the staff of the AMA Department of Practice Management. All are experienced educators in medical practice management and conduct educational programs nationwide for physicians, office managers, and medical assistants. An income tax deduction may be allowed for educational expenses undertaken to maintain or improve professional skills. See Treasury REGULATION, 1.162-5.

REGISTRATION FORM

☐**Gearing Up For Retirement Workshop**
Thursday, April 12, 1984
8:00 a.m. - 5:00 p.m.
Registration Fee: $225 (per physician)

☐**Medical Marketing Strategies Workshop**
Friday, April 13, 1984
8:00 a.m. - 5:00 p.m.
Registration Fee: $225 (per physician)
☐Resident Physician $150

Registration fee includes continental breakfast, lunch, workbook and spouse attendance. Other members of your staff may attend for $100. Resident physicians (and spouse) may attend for $150. 100% refund up to 5 days' notice before workshop begins. 80% refund 4 days or less.

Paradise Valley Resort
5401 N. Scottsdale Road
Scottdsdale, Arizona 85253
602 947-5400

Please Print or Type
Name________________ Badge Name for Spouse ________
Address________________
City________________ State ________ Zip________
Specialty________________ Telephone ________
My spouse ☐will ☐will not attend.
Make check payable to: Black and Skaggs Associates
Mail to: The PM Group P.O. Box 1130, Battle Creek, MI 49016

For More Information Call Collect (616) 962-2684

Continued from page 203

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept. & Nov.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Problem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
st, 2nd & 4th Wednesday, 3:30 p.m..
Anes/Surgery Joint Traum Conference
rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7:30 a.m.
Anesthesiology Journal Club
th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
th Thursday, 8:00 a.m.
Medicine Problem Case Cônference
st Thursday, 12 Noon.
Medicine Rheumatology
nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
th Thursday, 12 Noon.
OB/GYN Resident Conference
st, 2nd, & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12 :30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201. Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference ·
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Urology Conferences
Weekly Tuesdays, Room 2413 - Uropathology
Weekly Tuesdays, Room D-335 - Consultation
Weekly Fridays, Room 3134 - Uroradiology
These activities are a part of the CME program at the Veteran's Administration Medical Center
Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm T5, Contact:
Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8:00-9:00 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays, 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursdays, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly Friday. 12:00-1:00 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

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SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.

Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am - 8:30 am, Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.

Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium.
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesdays, 12:30 p.m., Contact: Dr. Lighther.
Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

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3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.
Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact: Dr. Sibley.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m., Contact: Dr. Ewy.

Cardiology Non-invasive Conference
Weekly, Friday, 3:30 p.m., Contact: Dr. Ewy.

Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn, Contact: Karen Garcia.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC, Contact: Dr. J. Goldstone.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

Obituary

George Treymann Hoffmann, M.D.
1920—1983

Dr. George T. Hoffman died of heart disease on December 26, 1983, at the age of 63. George had partially recovered from a cerebrovascular accident one year previously, leading to his retirement from active neurosurgical practice and his association with Dr. Carlos Carrion. However, he continued to participate in the teaching conferences for the residents of the Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, and he donated his library to the neurosurgical residents during this period of time prior to his death.

Dr. Hoffmann was born on november 15, 1920, in West Milwaukee, Wisconsin. His parents were of German-Norwegian origin, and he was a member of the Catholic Church. His elementary and high school education were received at Holy Assumption and West Allis High Schools in West Allis, Wisconsin. He received his B.S. degree from Marquette University in Milwaukee, Wisconsin in 1942, and graduated with his M.D. degree from the same university in 1944. He served an internship at Youngstown Hospital, Youngstown, Ohio, from October 1944, to June 1945, and then active duty in the U. S. Naval Reserve Medical Corps from July 1945, to August 1946. He was licensed to practice medicine in Wisconsin on June 26, 1946, commencing with a year of General Practice Residency at St. Michael Hospital in Milwaukee, Wisconsin and a period of general practice in Wisconsin for four years until he resumed his formal education in 1951 .

Following a term of one year (1951-1952) at the University of Pennsylvania Postgraduate School of Medicine in Surgery, George was accepted by the Neurosurgical Residency Training Program of the University of Texas, Medical Branch, Galveston, under the direction of Dr. Samuel Snodgrass, (1953-1958),including one year of General Surgery. During this time he was licensed to practice medicine in the states of California (1951) and Texas (1952). He also served another tour of duty with the U. S. Navy Reserve from July 1953 to May 1954.

He was invited by the late Thornton Pfeil, M.D., to join him in neurosurgical practice in Phoenix, Arizona. He practiced neurosurgery in Phoenix continuously since his licensure in Arizona on July 19, 1958, over a period of 24 years, until his vascular illnesses began in late 1982. George was an excellent student of neurosurgery and developed an interest and expertise in pediatric neurosurgical problems because of his responsibilities as Chief of Neurosurgery at the Arizona Crippled Children's Hospital. He was a founding member of the International Society of Pediatric Neurosurgeons and traveled to Jerusalem in 1978 to present a summary of his experience in this field. He also participated in other neurosurgical meetings in Mexico and Australia and the International College of Surgeons. In association with Phoenix orthopedists, Drs. Willard Hunter and Howard Johnston, George introduced intradiscal therapy with chymopapain a decade ago before the Federal Drug Act withdrew it from clinical use, and was helpful in the reintroduction of this technique at the Barrow Neurological Institute under more restricted conditions. He was interested in neurosurgical measures to control pain, orthodox and unorthodox.

George belonged to the American Association of Neurological Surgeons, the Congress of Neurological Surgeons, the Western Neurosurgical Society, the Rocky Mountain Neurosurgical Society (President), the Arizona Neurosurgical Society, as well as the American, Arizona, and Maricopa Medical Societies.

Dr. Hoffmann was elected to the governing committee of the Barrow Neurological Institute of St. Joseph's Hospital and Medical Center for the first decade of operation of the Barrow Neurological Institute (1962-1972). He received a Citation of Merit from the Institute at the annual Staff-Resident Brunch in June 1983, shortly after taking sick leave and six months prior to his death. George also received several citations from the Boy Scouts of America for his assistance to the Medical Explorer Scouts at Good Samaritan Hospital. He had been an Eagle Scout. He made it possible for several Barrow Neurological Institute neurosurgical residents to travel to national meetings. Some of his other favorite charities were the Little Sisters of the Poor, and the St. Vincent's Dining Room.

George and Janet Hoffmann were married thirty-five years ago during George's general practice years. Janet aided and abetted George's happiness and successful practice by presenting him with three daughters and two sons—Kathy Grotting, Joan Brassfield, Laureen Tudeen, G. Timothy Hoffmann, and Douglas Hoffmann. He often assisted Janet with her work with the Assistance League of Phoenix and when she was president of the Maricopa County Medical Society Auxiliary. A George T. Hoffmann Memorial Fund has been established by the Barrow Neurological Foundation, 350 West Thomas Road, Phoenix, Arizona 85013, at the request of Janet to benefit neurosurgical trainees—to commemorate his lifetime interest in teaching and the study of his specialty. George will be greatly missed by his family and his many friends.

John R. Green, M.D., F.A.C.S.

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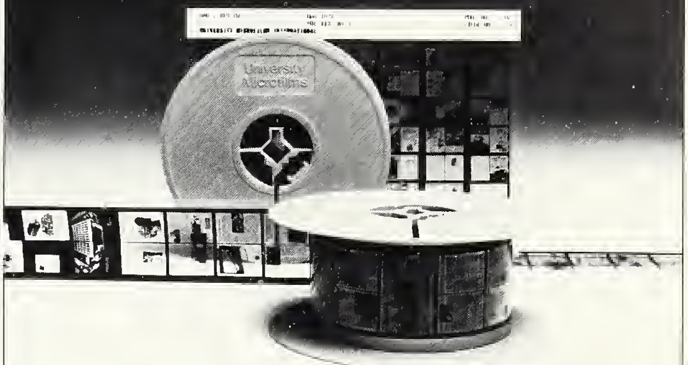

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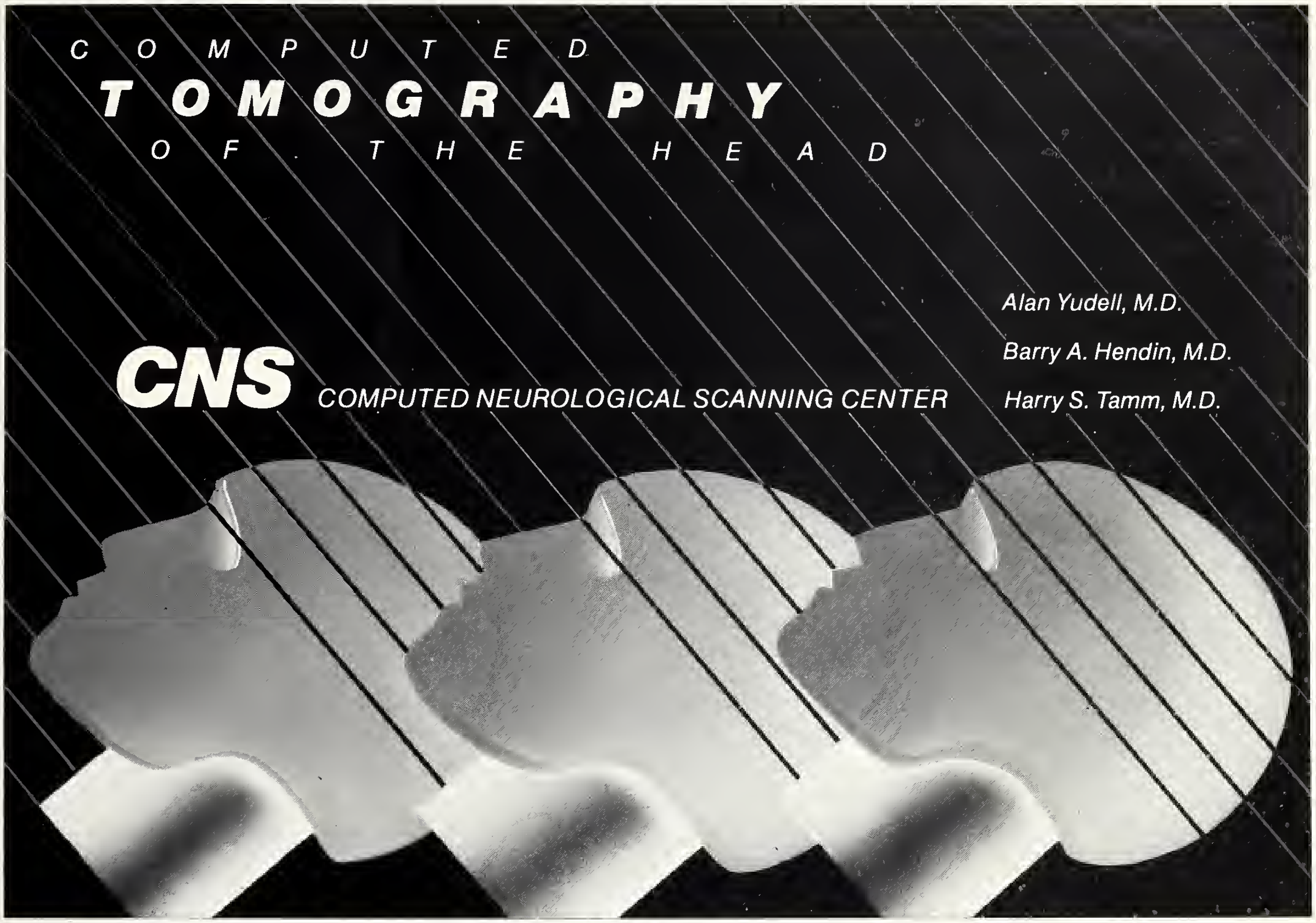

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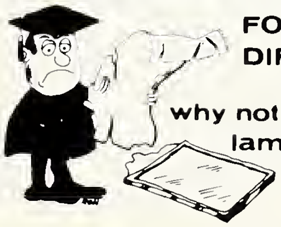

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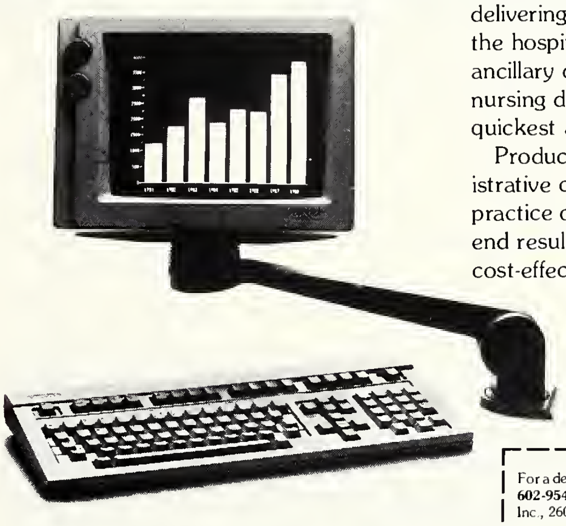

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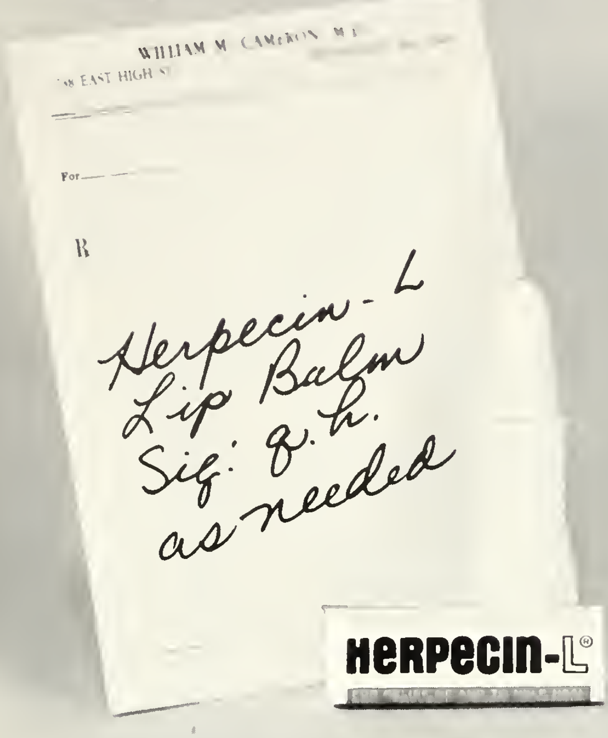

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AM Cardiology

Coronary Artery Bypass and Antiplatelet Therapy

Jack G. Copeland, M.D.
Steven Goldman, M.D.

Editor:
Kenneth B. Desser, M.D.

There is no doubt that the efficacy of saphenous vein aortocoronary bypass grafting in suitably chosen patients relates directly to graft patency. Unfortunately, grafts close postoperatively in a fairly predictable manner even under the most optimal circumstances. Reported patency rates in the first postoperative year range from 65% to 95% depending on a large number of variables among which patient and artery selection are most important.

Studies from the Montreal Heart Institute[1-3] indicate that 12% of grafts are closed two weeks after surgery, 15% to 35% are closed at one year, and that an average attrition rate of five percent per year is observed over the next decade. Considerable center to center variability in attrition rates is anticipated with the cited rates perhaps reflecting superior results, but the trend for substantial graft closure during the early weeks to one year most likely holds for all centers. Coronary arterial[4] and graft narrowing[5] also account for the time related clinical deterioration of a number of long-term survivors.[6]

Major factors related to vein graft patency include[7] coronary artery size of 1.5mm diameter or greater, the capacity of the distal coronary circulation to carry blood flow, and technical considerations including anastomotic stenoses, kinks, and improper angle between graft and artery.[2] Thrombosis serves as the common mechanism for early graft occlusion. Intimal proliferation, causing varying deformities,[5] comes into play after months to years.[8-11]

Thrombus formation is due to local hemodynamic factors, damage to the intima of the vein graft, and platelet plug formation. Intimal proliferation results from a combination of factors including intimal damage or response to arterial pressure and possible platelet dependent intimal proliferation. Platelet aggregation is an important part of blood coagulation particularly in the arterial system where white thrombi consist primarily of platelets. A role for platelets both in early graft occlusion and chronic graft and arterial atheroma formation has been suspected.

Shortened platelet survival times indicating platelet consumption have been reported in patients with occluded aortocoronary saphenous vein grafts[12,13] and in patients with coronary artery disease.[13,14] A possible role for antiplatelet agents in preventing thrombosis of vein grafts as well as intimal proliferation and fibrosis has been suggested on the basis of these studies.[13] This is supported experimentally in a canine model using aortocoronary vein grafts.[15] Preoperative dipyridamole treatment for two days with 55mg per day was followed by postoperative treatment with the same dose of dipyridamole and aspirin, 325mg per day. Careful measurements of luminal narrowing showed significantly greater angiographic narrowing in untreated animals in the distal graft segment at 14 days following surgery and in proximal and distal segments at death two, four or six months postoperatively. Even more impressive from the same laboratory,[16] dogs with aortocoronary polytetrafluoroethylene bypass grafts treated with antiplatelet agents demonstrated 60% graft patency at six months as compared to no platency at one month in control animals. Again dipyridomole was started 48 hours preoperatively and aspirin on the day of surgery.

The role of antiplatelet agents in the pathogenesis of arteriosclerosis, a much greater question and out of the scope of this article, has been addressed by several large prospective studies using various agents (British trial aspirin,[17] aspirin myocardial infarction study research group,[18] anturane reinfarction trial research group,[19] Persantine-Aspirin reinfarction study group[20]). They have not been conclusive enough to indicate the use of antiplatelet agents for the prevention of arteriosclerosis, and they have excluded patients post coronary artery bypass.

A number of prospective studies have examined the effects of various postoperative antiplatelet regimens

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From: Section of Cardiovascular and Thoracic Surgery, The University of Arizona Health Sciences Center, College of Medicine, Department of Surgery, Tucson, Arizona 85724 and Section of Cardiology at the Tucson Veterans Administration Hospital, Tucson, Arizona 85723. Reprint requests to Jack G. Copeland, M.D., Professor and Chief Section of Cardiovascular and Thoracic Surgery, College of Medicine, Tucson, Arizona 85724.

aphenous vein graft patency, two of these also valuated coumadin.[21,22] In a study from the University f Oregon,[21] patients were studied: 24 controls, 13 atients receiving aspirin 325mg and dypiridamole 75mg hree times a day beginning on the third postoperative lay, and 13 patients treated with warfarin anticoagulation beginning on the third postoperative day. At ix months postoperative on angiographic studies there vere no significant differences in graft patency among he three groups.

In a study from the Massachusetts General and Beth srael Hospitals[22] 111 patients of 216 entering were tudied postoperatively with arteriography. Medication vas started on the third or fourth postoperative day and he placebo (n=77) and aspirin 300mg twice daily (n=71) roups were assigned to a double blind protocol. The varfarin treated patients (n=68) could not be placed in a linded protocol because of the necessity of following rothrombin times. There were no significant diferences among these groups in graft patency.

A third study from the West Roxbury Veterans Hospital and Brigham and Women's Hospital[23] again onfirmed that no significant difference in graft patency t one year postoperative was seen in patients treated vith aspirin 325mg three times per day (n=64), aspirin 325mg and persantine 75mg three times per day (n=60) versus controls (n=50). The antiplatelet agents were tarted on the third to the fifth postoperative day.

Antiplatelet agents or warfarin in these studies were tarted at least three days after coronary artery bypass urgery and did not improve graft patency. The studies f Baur in Minneapolis[24] and Brown at the Wadsworth Veterans Hospital in Los Angeles were similar in design o the Oregon and two Boston studies in that antiplatelet gents were given postoperatively, however, patency vas improved in some groups.

In the Minneapolis prospective randomized study ulfinpyrazone 800mg per day was started 24 hours after operation and graft angiography was performed on the seventh through fourteenth days. A trend for improved patency was seen in all treated groups, but the only significant improvement in patency was in grafts to the eft anterior descending.

Placebo, aspirin 325mg three times per day, and aspirin 325mg plus dipyridamole 75mg three times per day (approximately 50 patients per group) were started on therapy three days after operation in the Wadsworth Veterans study.[25] Recatheterization at one year revealed improved patency in grafts to arteries with an internal diameter of greater than 1.5mm, an intraoperative graft flow of greater than 40cc per minute, or a reactive hyperemia flow of less than 15% above baseline.

Even more promising information has come from the Mayo Clinic prospective, randomized, double-blind study of aspirin-dipyridamole (n=205) versus placebo (n=202).[26] The treatment group was given dipyridamole 400mg per day for two days before operation, then Dipyridamole 100mg at 6:00 a.m. on the day of surgery and again by nasogastric tube 100mg one hour postoperative. At seven hours postoperative aspirin 325mg and dipyridamole 75mg were given every eight hours by nasogastric tube or orally. Angiography at seven days to six months postoperative showed significant improvement in graft patency in the treated group with 97% patency of distal anastomoses versus 90% patency in controls. Perioperative bleeding was 1030 ±44ml in the treated group versus 967 ±36ml in the controls. At one year[27] the occlusion rate in treated patients was 21% versus 42% in the untreated group.

Summary

An early vein graft closure rate after aortocoronary bypass of 10% to 20% is anticiapted even under the best of circumstances. Thrombosis causes early vein graft closure, intimal proliferation and fibrosis appear later and contribute to late graft closure.

Platelets are consumed when vein grafts thrombose. Treatment with antiplatelet agents prolong platelet survival and when given pre- and perioperatively in experimental animals decrease the narrowing of vein grafts and permit patency of polytetrafluoroethylene grafts.

Controversy exists regarding the therapeutic value of antiplatelet agents instituted postoperatively in coronary artery bypass patients. Only selected subpopulations of bypass patients have improved graft patency.

Preoperative dipyridamole and immediate postoperative aspirin and dipyridamole have in one series significantly improved patency of saphenous vein aortocoronary bypass grafts. This perioperative therapy has not increased chest tube bleeding. Patency at one year is even more strikingly improved.

Current evidence suggests that antiplatelet agents given pre- and perioperatively to patients having aortocoronary saphenous bypass surgery decreases early postoperative graft thrombosis and later graft occlusion from intimal proliferation and fibrosis.

The Cooperative Studies Branch of the Veterans Administration Hospital initiated an 1100 patient study to antiplatelet agents in coronary artery bypass grafting under the cochairmanship of the authors in July, 1983. Five treatment groups, including three with a single 325mg twelve preoperative aspirin doses, will be followed with angiography at one week and one year after surgery. The purpose of this study is to confirm or deny the information which has thus far been accumlated with regard to the efficacy of preoperative antiplatelet therapy in coronary artery bypass graft patients. The Mayo Clinic data, while suggestive that antiplatelet therapy improves graft patency, has not been confirmed by any other study in the world. Further, on a recent informal sampling we found that their protocol is not widely used by cardiac surgeons doing coronary artery bypass surgery. The general feeling appears to be that we need to learn more of the risks and of the benefits of antiplatelet therapy in coronary artery bypass surgery before such therapy becomes routine.

Editorial Comment

Kenneth B. Desser, M.D.

It has been established that approximately one-half of implanted coronary bypass grafts will occlude ten years following operation. Early occlusion is thought to be thrombotic in nature whereas late stenosis is based on venous internal smooth-muscle-cell proliferation. The article by Copeland and Goldman points out that such grafts probably require drug maintenance in order to remain patent. How often have we heard the proclamation that "the patient is now free of symptoms and off all medication." The weight of scientific evidence currently suggests that following aorto-coronary bypass grafting the patient should graduate into a new pharmacologic arena. A lead article in the January 24 issue of the *New England Journal of Medicine* by the Mayo Clinic group indicates that dipyridamole and aspirin continue to be effective in preventing vein-graft occlusion one year after operation. The key feature of such therapy appears to be the timing of drug administration. This timing is also very controversial since many cardiac surgeons are loathe to have their patients receive antithrombotic medication prior to the operative procedure. The Mayo Clinic regimen requires at least one and preferably two days of oral drug therapy prior to bypass and maintenance through a nasogastric tube one and seven hours following the operation. Dosage also represents a potential problem. Beginning two days before bypass 100 mg of dipyridamole is given four times a day. Since aspirin is not administered until seven hours after operation in the 48 hour regimen and one day prior to surgery in the modified 24 hour regimen, acetominophen may be required to obviate the monumental headaches which have been observed in subjects receiving high dose dipyridamole therapy. Patients should be warned that the real headache may occur a few years down the line when their grafts begin to close.

Supported by the Biomedical Research Memorial Fund, Inc.

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Medical Genetics

Hemochromatosis

udith E. Allanson, M.B., Ch.B., M.R.C.P.

ditor:
rederick Hecht, M.D.

bstract

Hemochromatosis is a disorder caused by iron eposition in tissues, resulting in systemic damage, with lassic involvement of the liver, pancreas and skin. The rimary form of hemochromatosis, hereditary idioathic hemochromatosis, is a genetic disorder with an utosomal recessive pattern of inheritance. Studies uggest that one in 400 persons in the Caucasian opulation may be affected and one in ten persons may e carriers of the gene for hemochromatosis. The gene or hereditary hemochromatosis is on chromosome six losely linked to the HLA region and associated with ILA types A3 and B14. To detect persons with hereditary emochromatosis, transferrin saturation studies should e done, together with HLA typing of female family nembers. Hereditary hemochromatosis is one of the nost common genetic diseases of importance in Caucasians and its early detection is the key to reventative health care.

ntroduction

In hemochromatosis there is progressive accumulation of iron in the body with resultant organ lamage. Iron overload may occur secondary to any of he factors shown in Table 1. The primary form of emochromatosis, once known as idiopathic hemohromatosis, is a genetic disorder.

Table 1
Secondary Hemochromatosis

Alcohol excess
Oral/parenteral iron excess
Repeat transfusions in persistent anemia, e.g., thalassaemia
Porphyria cutanea tarda
Congenital transferrin deficiency
Portocaval shunts

Clinical Features

Iron deposition with consequent fibrosis leads to dysfunction. The classical triad of cirrhosis, slate gray skin and diabetes is caused by involvement of liver, skin and pancreas respectively. This triad of features, however, is uncommon.

Individuals with hemochromatosis often present with nonspecific findings such as weakness, weight loss, arthralgia, abdominal pain or cardiac complaints. Table 2 outlines other organs which are frequently involved by iron overload and the attendant clinical features.

Table 2
Hemochromatosis: Clinical Features

Liver:	Cirrhosis; encephalopathy
Skin:	Slate gray pigmentation
Pancreas:	Diabetes
Heart:	Cardiomyopathy
Joints:	Arthropathy
Pituitary:	Hypopituitarism: Hypogonadism, Loss of libido, Impotence, Amenorrhea

Hemochromatosis is rare in the under 30-year-old. The usual presentation is in the fifth and sixth decades.

The onset of signs and symptoms is often earlier in men and later in women, who are protected from iron excess by menstruation during their reproductive years. This leads to the erroneous impression that the disorder is more common in males; it is equally frequent in males and females.

Genetics

Frequency of hereditary hemochromatosis (HH): Primary hemochromatosis is an autosomal recessive disorder. By this we mean that an individual has two copies of a different gene. HH was once considered to be an uncommon condition affecting one in 20,000 of the general population. Recent population studies in Mormons, Mennonites, Scots and Bretons have indicated that this may be one of the most common genes in the Caucasian population. The frequency of HH is surprisingly consistent in these four population groups. Approximately one in 400 persons is affected.

The frequency of the gene: Once the frequency of the gene is known the number of carriers (individuals who

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rom: The Genetics Center of Southwest Biomedical Research nstitute, 123 East University Drive, Tempe, Arizona 85281. Reprint equest to Dr. Judith E. Allanson, The Genetics Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, rizona 85281. Supported in part through funds provided by the U. S. Department of Health and Human Services, Bureau of Health Care Delivery and Assistance, for an Arizona Genetics Program; and by the rizona State Legislature via the Center for Disease Control, Arizona Department of Health Services for investigation of birth defects in rizona.

have a single copy of the different gene masked by the normal gene for iron metabolism) can be estimated from the Hardy-Weinberg equation. For any gene locus in a population with random mating, according to the Hardy-Weinberg equation, the genotype frequencies are determined by the relative frequencies of the alleles of which they are composed. Using two different alleles, one normal and one for hemochromatosis, there are three possible combinations of alleles: two normal, two for hemochromatosis or one of each. The frequency of each combination depends on the frequency of each allele. If p is the frequency of the normal allele and q $1 - p$ is the frequency of the hemochromatosis allele, then the relative proportions of the three combinations are: p^2 (2 normal alleles) + $2pq$ (1 normal and 1 hemochromatosis allele) + q^2 (2 hemochromatosis alleles). q^2 is the number of persons affected with HH. This is approximately one in 400 persons, so $q = 1$ in 20. $2pq$ (the number of carriers of the hemochromatosis gene) is about one in ten. Thus, one in ten Caucasians may carry the gene for hemochromatosis. By comparison, at most, one in 25 carry the gene for cystic fibrosis, the next most common genetic disorder of importance in Caucasians.

The location of the gene: The hemochromatosis gene is closely linked to the HLA region on chromosome 6. By linkage one means the tendency of genes at 2 loci on the same chromosome to segregate together. In a family where linkage is established a particular HLA haplotype correlates with presence of the HH allele. This is important in the investigation of other family members.

As HH is an autosomal recessive disorder; affected persons have inherited one copy of the HH gene from their mother and one from their father. The chance of sibling of an affected individual inheriting a double cop of the different gene is 25%. Those siblings with two HL haplotypes in common with the affected individual, wit linkage, are likely to be homozygous for HH compare to those siblings with no HLA haplotypes in commo who are at minimal risk.

Association of the gene: Hemochromatosis is one o several conditions which is associated with a specifi HLA haplotype due to linkage disequilibrium. The locu A3 is found in 73% of individuals with HH compared t 21% of controls. The locus B14 is found in 30% o individuals with HH compared to 6% of controls. Fe other disorders have both an HLA association an linkage.

Etiology

The etiology of the iron abnormality is unknown although it appears to affect the normal feedback inhibition of iron absorption by ferritin.

Laboratory Tests

The most sensitive laboratory test is transferrin saturation and, particularly in men, there is a very clear differentiation between the homozygote, heterozygote and normal individual with transferrin saturations greater than 70% in the homozygote, between 50% and 70% in the heterozygote and less than 50% in the normal individual. Other laboratory findings are outlined in Table 3.

HLA studies are particularly important in women where there may be a greater overlap of transferrin saturation between homozygote, heterozygote and normal individuals.

Table 3
Laboratory Abnormalities

	Normal	Hereditary Hemochromatosis	Secondary Forms
Transferrin saturation	<50%	>70%	Normal unless carrier of HH
Serum iron	<170 mcg/100 ml		Normal
Total iron binding capacity	350-450 mcg/100 ml		Normal
Ferritin	<125 mcg/ml female <330 mcg/ml male		
Hepatic iron concentration	<40 mcg/100 mg wet liver	>400 males >250 females	
Urinary iron excretion after desferrioxamine	<2.2mg/day		Normal
Liver biopsy: iron distribution		Deposition in parenchyma, initially in portal tracts	Deposition in reticuloendothelial system

reatment and Prognosis

Weekly phlebotomy will reduce the amount of iron verload in most cases. Half those treated will show nprovement in liver function, and the number of astrointestinal bleeds and episodes of encephalopathy nay be reduced. Little benefit in control of diabetes has een shown. There is rarely improvement in the rthropathy, hypogonadism or portal hypertension.

The main causes of death in the untreated individual re congestive cardiac failure (30%), gastrointestinal emorrhage (15%), hepatic failure (15%) and hepaocellular carcinoma (15%). The 5-year survival rate in ne untreated is 18%. With treatment the 5-year survival ate is raised to 66%.

amily Studies

Since hereditary hemochromatosis is an autosomal ecessive condition, the offspring of affected individuals nust necessarily carry the gene for HH. Since carriage of ne gene in the Caucasian population may be as high as ne in ten individuals, there is a reasonable chance that n unaffected spouse may also carry the different gene. n this situation (marriage of affected person with a arrier spouse) the children are at 50% risk to develop ereditary hemochromatosis. Siblings of an affected ndividual have a 25% risk to inherit the disease.

It is, therefore, important to study the immediate amily of an affected person in order to ascertain those ndividuals at risk before they become symptomatic. In his way, preventative management, either with hlebotomy or chelation therapy can be started to revent sequelae. There is good evidence that the eterozygote will never manifest clinical problems in he absence of secondary factors such as those outlined n Table 1.

ummary

Hereditary hemochromatosis may be more common han cystic fibrosis within the Caucasian population. It is mportant to study the family of affected persons in rder to detect those at risk for developing hemochromatosis so that preventative measures can be instiuted before symptoms occur.

We recommend transferrin saturation in all siblings nd offspring of the affected person, combined with HLA typing of family members, including spouses, to stablish linkage phases.

Acknowledgments: We wish to thank Ms. Ruth A. Allen for clerical assistance.

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Neurology

Unusual Presentations of Lumbar Stenosis

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Abstract

Lumbar stenosis, also known as the intermittent cauda equina syndrome, is due to a disorder of the caudal nerve roots secondary to a narrow lumbosacral canal. This syndrome usually presents with pain or intermittent claudication and paresthesia in the legs evoked or accentuated by exercise and relieved by rest. However, the author has encountered four patients who presented with an unusual clinical picture including impotence, severe bilateral knee arthropathy, exercise induced weakness of one foot, and bilateral hip pain. All were treated successfully by decompressive laminectomy. The differential diagnosis and pathophysiology is discussed.

Key Words: Lumbar Stenosis, Laminectomy: Cauda Equina Syndrome.

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Significant narrowing of the lumbar spinal canal may be associated with acute radiculitis simulating disc disease or present with pain and paresthesia in the leg evoked or accentuated by exercise and relieved by rest. This is also known as an intermittent claudication of the cauda equina or Verbiest syndrome.[1] The clinical symptoms are thought to be due to a narrow lumbar canal. This lumbar stenosis is either acquired (arthritic or iatrogenic), consitutional, and has been described to be associated with herniated disc, hypertrophied ligamentum flavum, metastatic disease and Cushing's syndrome.[2-5] The narrow lumbar spinal canal becomes symptomatic when there is postural narrowing of the canal or exercise induced ischemia of the cauda equina.[6] The author had the opportunity to take care of four patients who had an unusual presentation due to a narrow spinal canal. These were all treated successfully with decompressive laminectomy.

Case Material

Case *1*: This 68-year-old right handed white female with the history of diabetes mellitus presented with the chief complaint of weak yet relatively pain free knees. The patient has been unable to walk for four months prior to her presentation. In the supine position she has good movement of her lower extremities. However, upon any attempt of walking, her knees will give out totally and she will fall. The patient had a fusion of the lumbosacral spine in 1967 for back pain, surgery was repeated several months later because of a nonfusion. She has done well since that time until the current episode. Physicial examination revealed weakness of both iliopsoas and quadriceps with the rest of the motor examination of the lower extremities normal. No atrophy was seen. Sensory examination was normal. Reflexes were absent in the lower extremities and present in the upper extremities. Mechanical examination was normal. The patient however was unable to walk because of proximal leg weakness. A myelogram revealed almost a complete block at L1-L2 as well as a scoliosis and narrowing of the spine at L3-4 and L4-5 (Figure la, lb, lc, ld.) The patient underwent a decompressive laminectomy from L1-L5. The patient had an uneventful postoperative course with recovery of the strength of her quadriceps and iliopsoas muscles. She is scheduled to undergo bilateral hinge knee replacement and now is able to walk with canes.

Case *2*: This 52-year-old right handed white male presented with a four to five month history of numbness of the dorsum of the foot and complete loss of control of his right ankle and foot upon walking 1 to 1-1/2 miles. This was not accompanied with pain. He had no other symptoms associated with this. He had no symptoms when not ambulating. Physical examination revealed bilateral absent patellar and achilles reflexes and a four out of five weakness of the foot extensors and evertors on the right side. Mechanical examination was normal. Myelogram revealed a lumbar stenosis primarily in the AP diameter from L1 to L5 (Figure 2a and 2b.) The patient underwent a lumbar laminectomy L1 through L5 wit complete recovery of his symptoms.

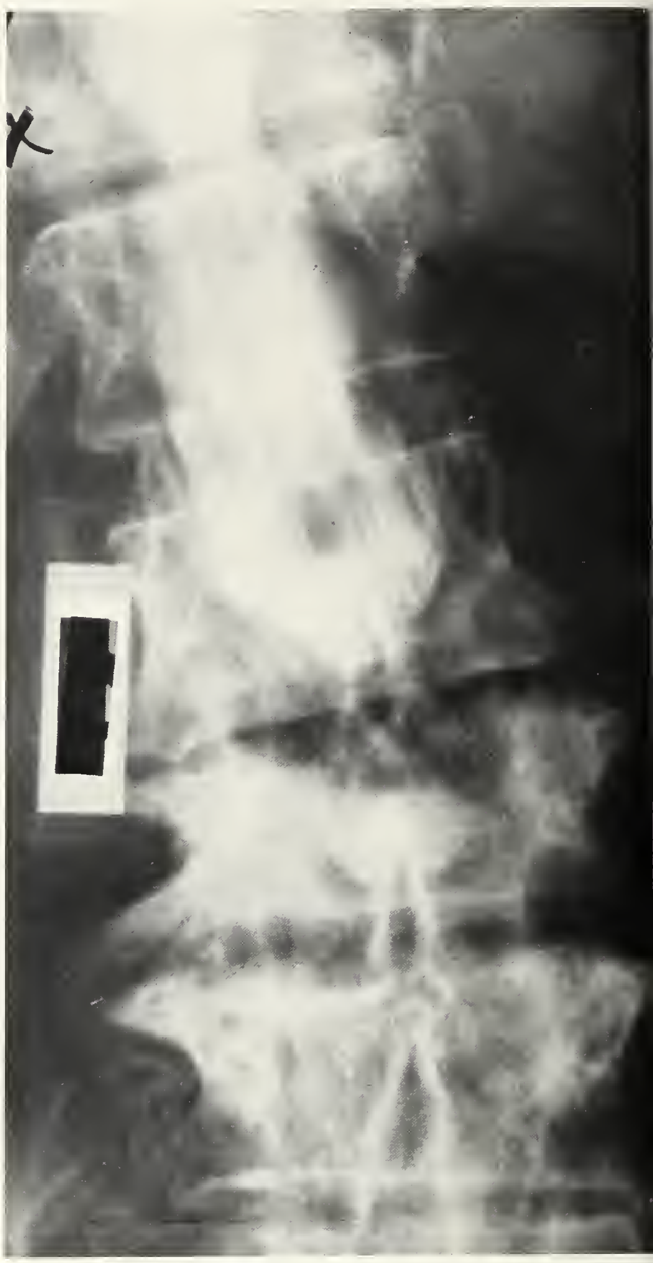

Figure 1a

Case 1: A-P metrizamide lumbar myelogram above the sever stenosis.

Case *3*: This 43-year-old right handed white male ha been impotent since the early 70's. The patient has ha extensive vascular, endocrinological, and psychiatri work up for this without any etiology being founc Physical examination was completely normal. Th patient had a myelogram which revealed a stenosis at th L4-5 interspace thought to be a combination of centra protrusion of a disc and bony spinal stenosis (Figure 3 and 3b.) The patient underwent a decompressive lumba laminectomy at L4-5 with removal of the disc at L4-5 wit bilateral foraminotomy at L5 and within a month th patient's impotence vanished and he now has a norma sex life.

Case 4: This 67-year-old right handed white male esented with the chief complaint of pain in both hips er the last two years. Physical examination revealed a ur out of five weakness of the right quadriceps. The hilles reflex on the right was 1+ on the left 2+. The echanical maneuvers including the Patrick's ma- uver were normal. Pulsation of the dorsal pedalis and sterior tibial arteries were good. Hip roentgenogram d orthopedic consultation revealed no hip disorders. e patient had a myelogram which revealed a lumbar enosis at L4-5 (Figure 4a and 4b.) He underwent a compressive lumbar laminectomy at L4-5 with solution of his symptoms and is now working full-time.

scussion

Lumbar stenosis usually presents with the signs and mptoms of intermittent claudication consisting of pain, weakness, numbness and dysesthesia of the legs initiated by standing or walking and relieved by rest, closely resembling vascular insufficiency of the legs. Examination at rest may show few neurological abnormalities, or the patient may have mild or even severe sensory, motor, reflex, and sphincter abnormalities. These findings may only be present after walking and standing. Straight leg raising may be normal. The posture of the patient with spinal stenosis can be diagnostic. The patient walks bent forward in a flexed position and leans forward when standing or sitting after symptoms have appeared.

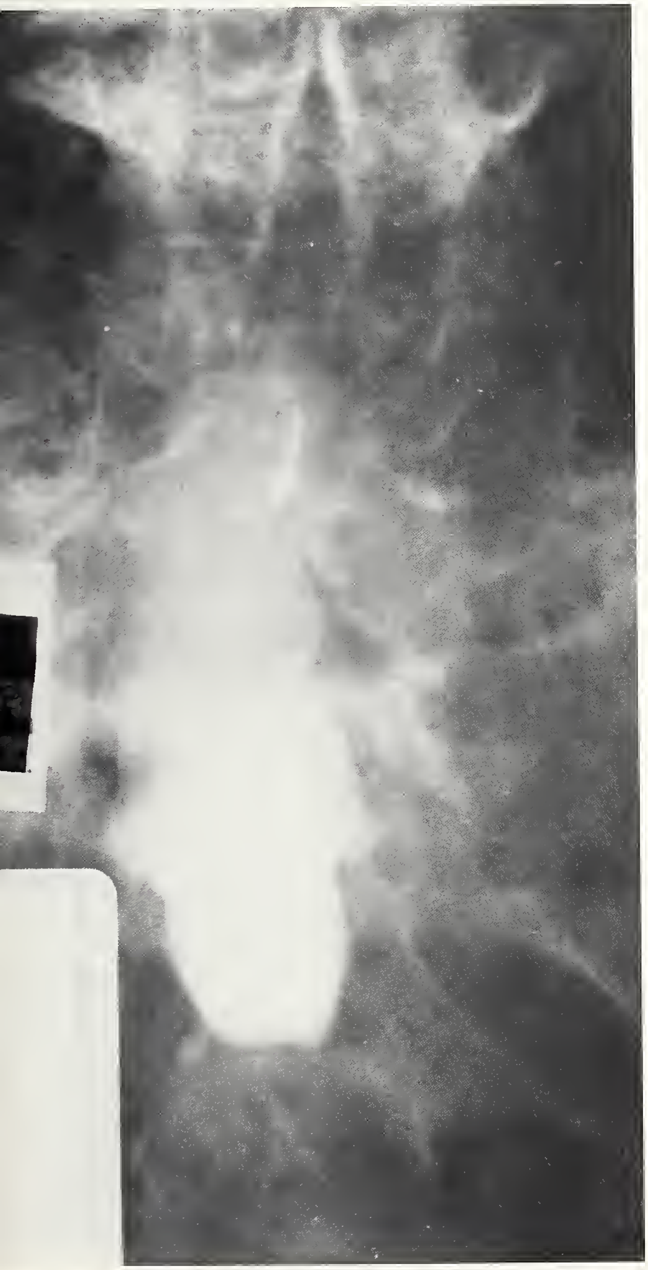

Figure 1b
ase 1: A-P metrizamide lumbar myelogram below the severe enosis.

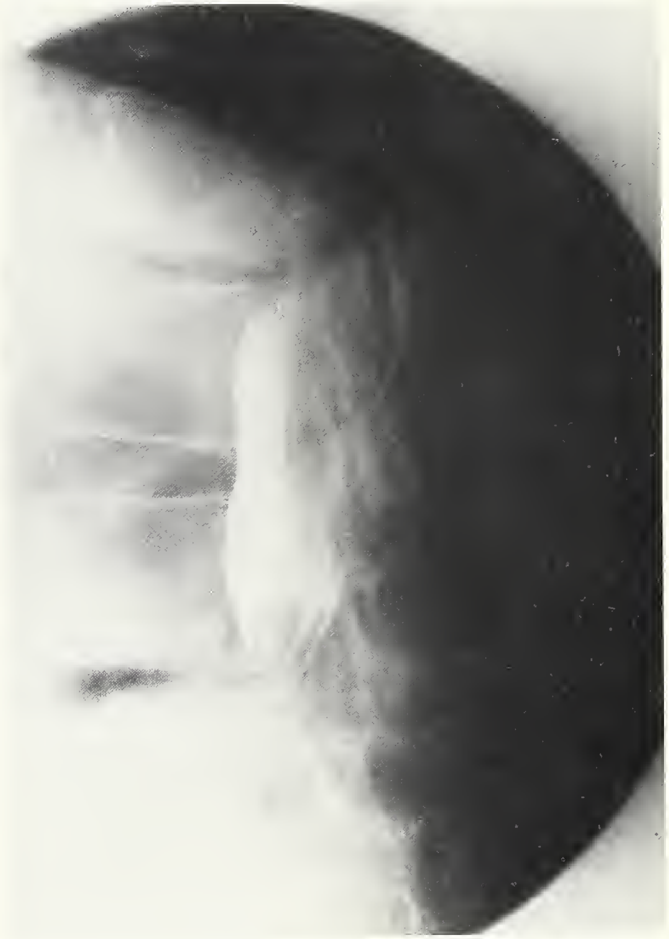

Figure 1c
Case 1: Lateral metrizamide lumbar myelogram above the severe stenosis.

A variant of spinal stenosis is the lateral recess syndrome where the lateral recess of the lumbar canal measures less than 4 mms in height.[7] This syndrome, although very much like the lumbar stenosis syndrome, is characterized by a more intense disabling unilateral or bilateral leg pain brought on by standing or walking.

However, when these common signs of symptoms are not present then the diagnosis is usually one of exclusion. A high index of suspicion and a normal vascular examination alerts the clinician that the entity of lumbar stenosis or lateral recess syndrome should be entertained.

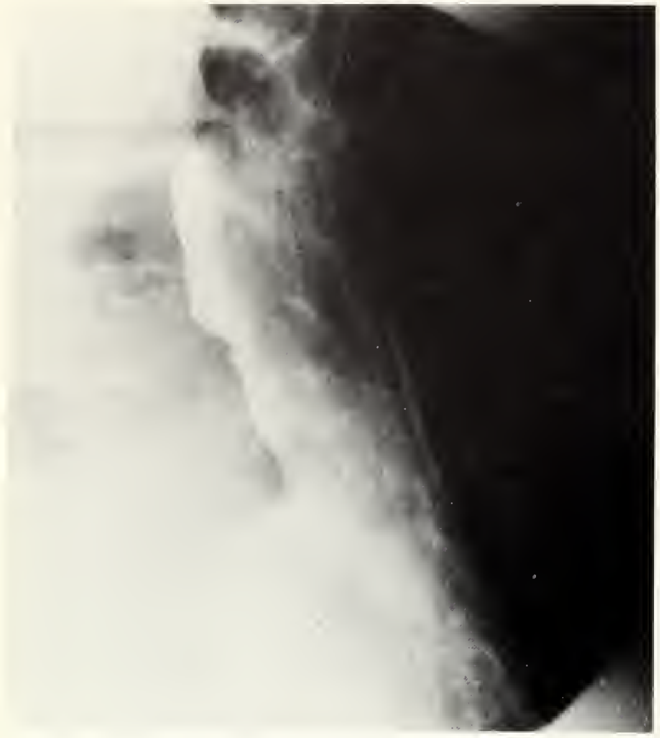

Figure 1d
Case 1: Lateral metrizamide lumbar myelogram below the severe stenosis.

These four patients, each with different atypical clinical presentations, all had one common cause, lumbar stenosis. Laminectomy brought beneficial results to all four of these patients. The etiology of the lumbar stenosis in these patients was postoperative lumbar canal narrowing, lumbar spondylosis and congenital narrow canal with superimposed bulging discs. The diagnosis of lumbar stenosis is usually made with a myelogram although recently the new generation computerized tomographic (CT) scan are of great help.

On CT scan, lumbar stenosis is suspected when the minimal saggital diameter of the lower lumbar canal is less than the normal range of 2.2-2.5 cm.[1] On the myelogram the standing films give a good demonstration of the size of the lumbar sac which in the AP diameter should be 16.5 mm and in the transverse 29.2 mm. All of these four patients had a lumbar sac less than 16.5 mm in the AP diameter.

The pathophysiology of lumbar stenosis is thought to be due to mechanical or vascular factors.[6] The mechanical theory assumes that the stenosis of the lumbar canal stretches the caudal equina nerve roots upon standing and/or the lordosis of the lumbar spine disturbs the relationship of the emerging nerve roots at the end of the vertebral foramina. The vascular theory assumes that there is an increase in blood flow in the blood vessels of the cauda equina with a subsequent increase in size and possibly in the number of afferent or efferent blood vessels in the normal individual. However, in those patients with constriction of the nerve roots by the underlying stenosis the increased dilatation and increased blood supply in response to th activity of the root is prevented by the compression, an symptoms of ischemic neuritis result.[6,8]

The common differential diagnosis to be considered aorto-iliac arterial obstruction. Several features ar reliable clues for differential diagnosis. In bot conditions patients may have painful symptoms relate to exercise. However, the earliest and most commo complaint of patients with aortic occlusion is a crampin pain in the hips, thighs, and calves. In the lumba stenotic entity the patient will usually complain of "pin and needles" or painful numbness and this pain ca often be radicular in nature. The patient with a vascula disease would have peripheral pulses that are absent o decreased. These are usually present in the individua with lumbar stenosis disease. Sensory change secondary to vascular disease are rare. Of course, th

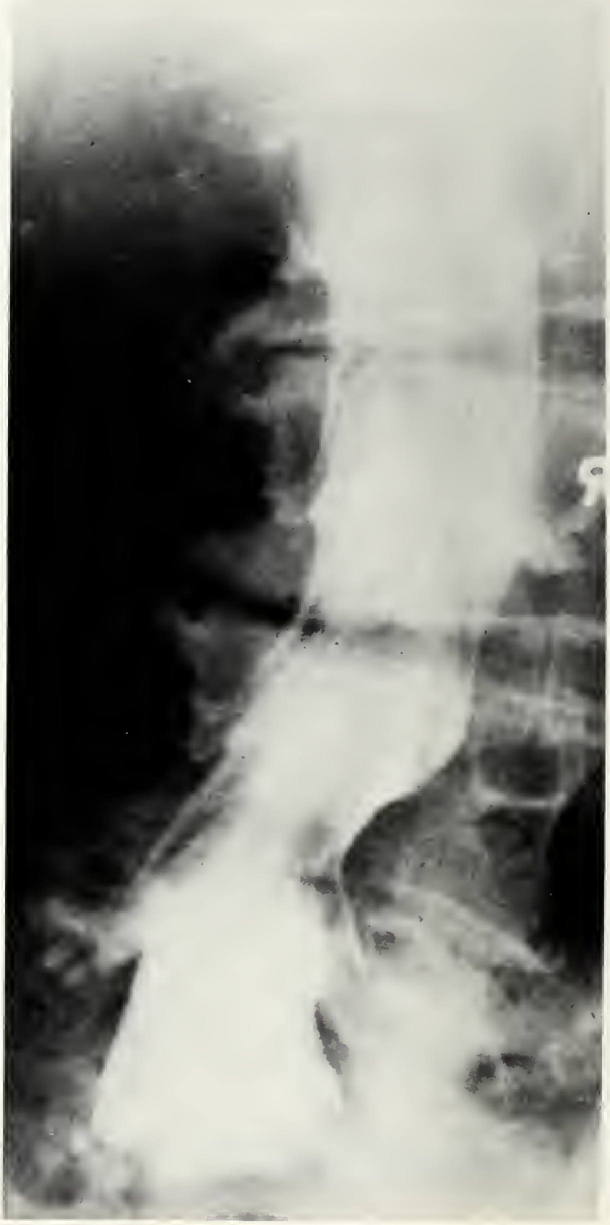

Figure 2a
Case 2: A-P metrizamide myelogram showing some scoliosis, root embarrassment and stenosis.

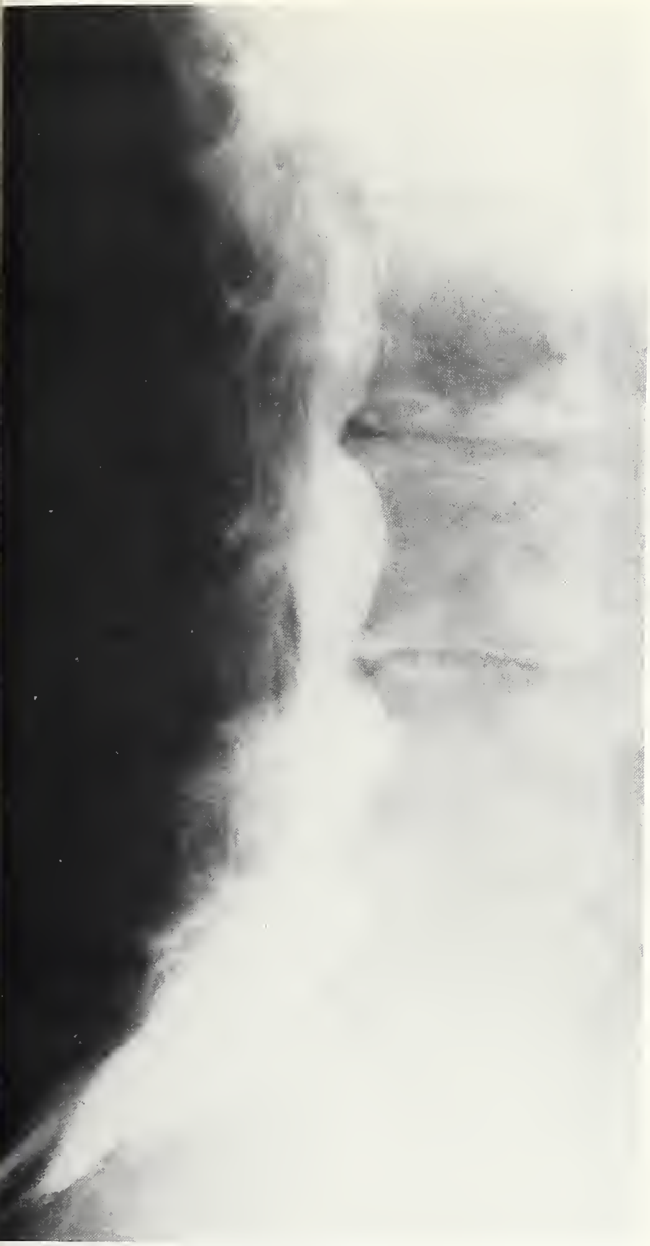

Figure 2b
ase 2: Lateral metrizamide myelogram showing multiple vels of stenosis.

iagnostic studies that differentiate one entity from the ther are the lumbar myelogram and/or the CT scan of e lumbar canal versus the arteriogram of the aorti-iliac essels. In these four patients however, the differential iagnosis would certainly not include lumbar stenosis itially. Only an intense workup to exclude other iagnoses and a high index of suspicion for lumbar enosis will lead to the correct diagnosis. A previous istory of lumbar surgery might alert the clinician for an arlier index of suspicion to this entity. Why these atients with lumbar stenosis did not present with a pical lumbar stenosis syndrome is difficult to theorize, owever, a selective embarrassment of the appropriate ots either by decreasing the blood supply to these ots or by mechanical disturbance of these roots could ause the symptoms and signs of these four patients.

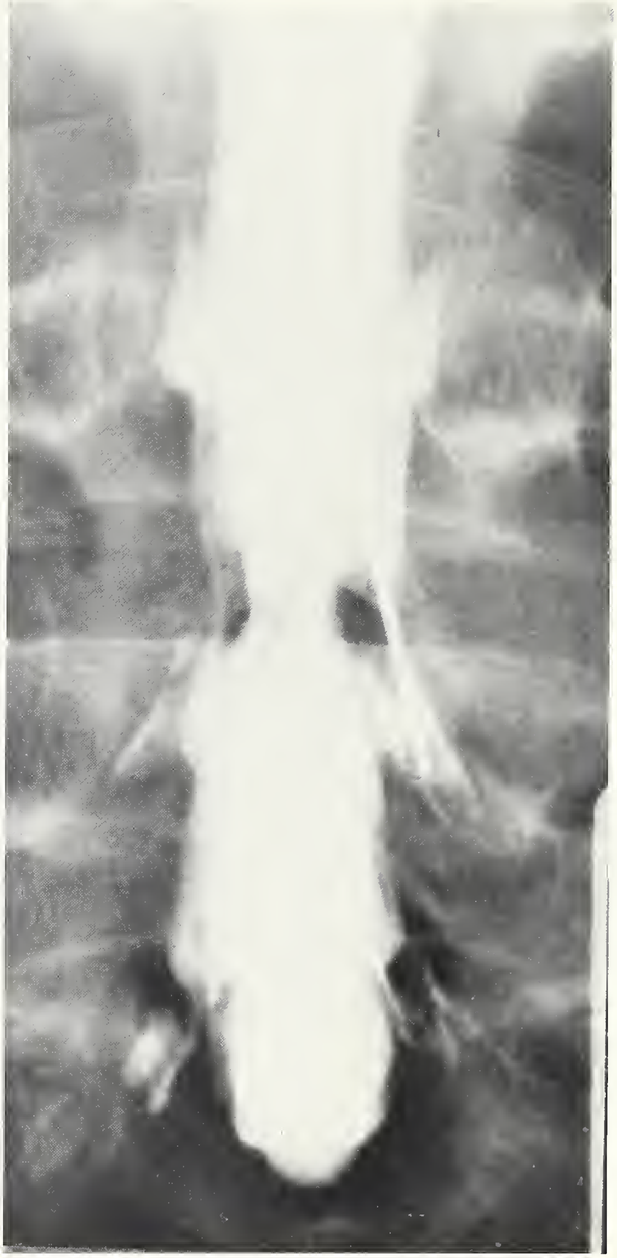

Figure 3a
Case 3: A-P pantopaque myelogram with stenosis at L4-5.

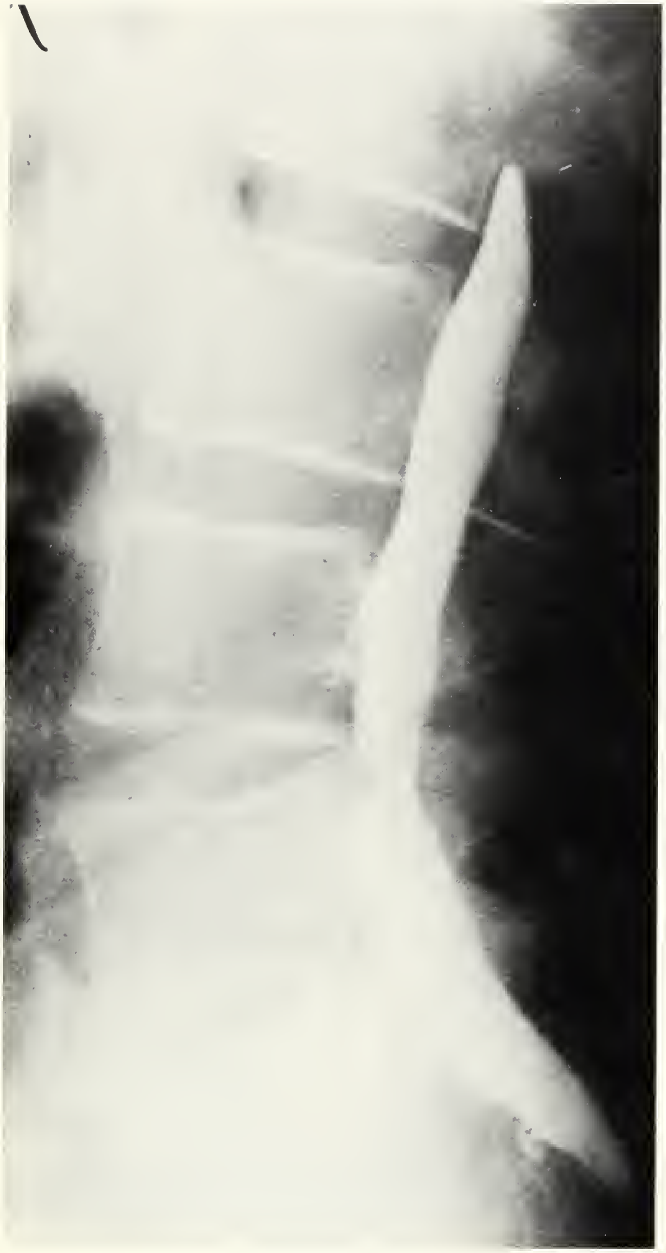

Figure 3b
Case 3: Lateral pantopaque myelogram demonstrating both an anterior and posterior narrowing at L4-5.

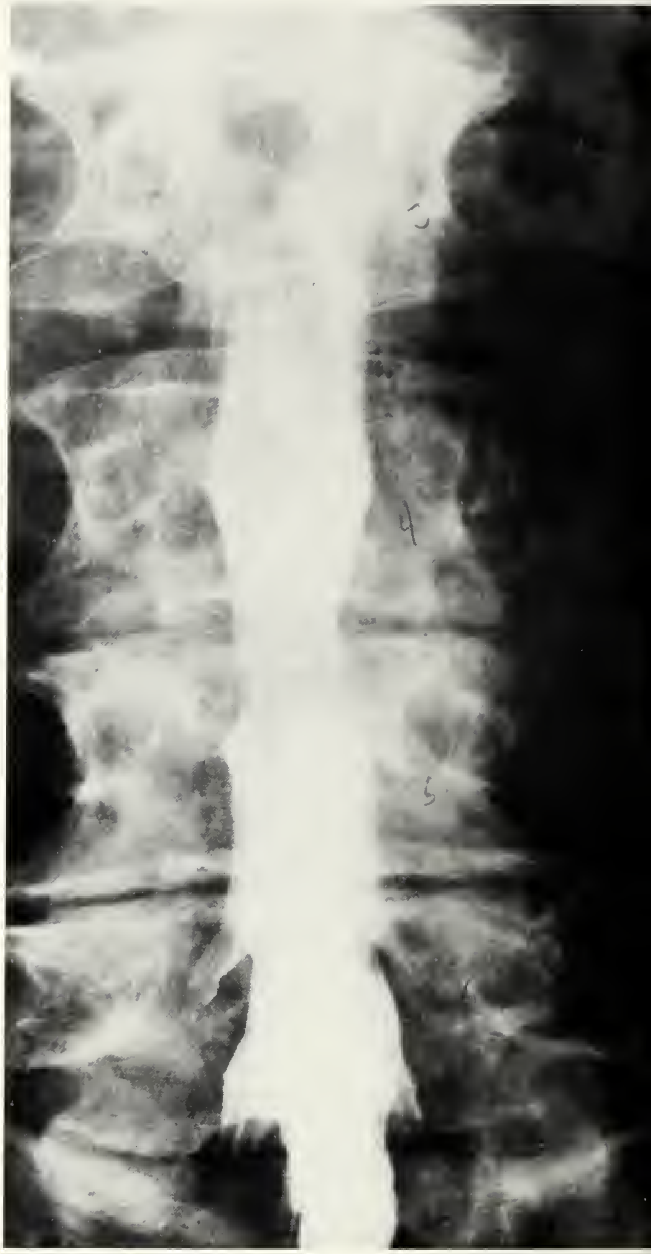

Figure 4a
Case 4: A-P metrizamide myelogram with stenosis primarily a
L4-5: six lumbar vertebra are present.

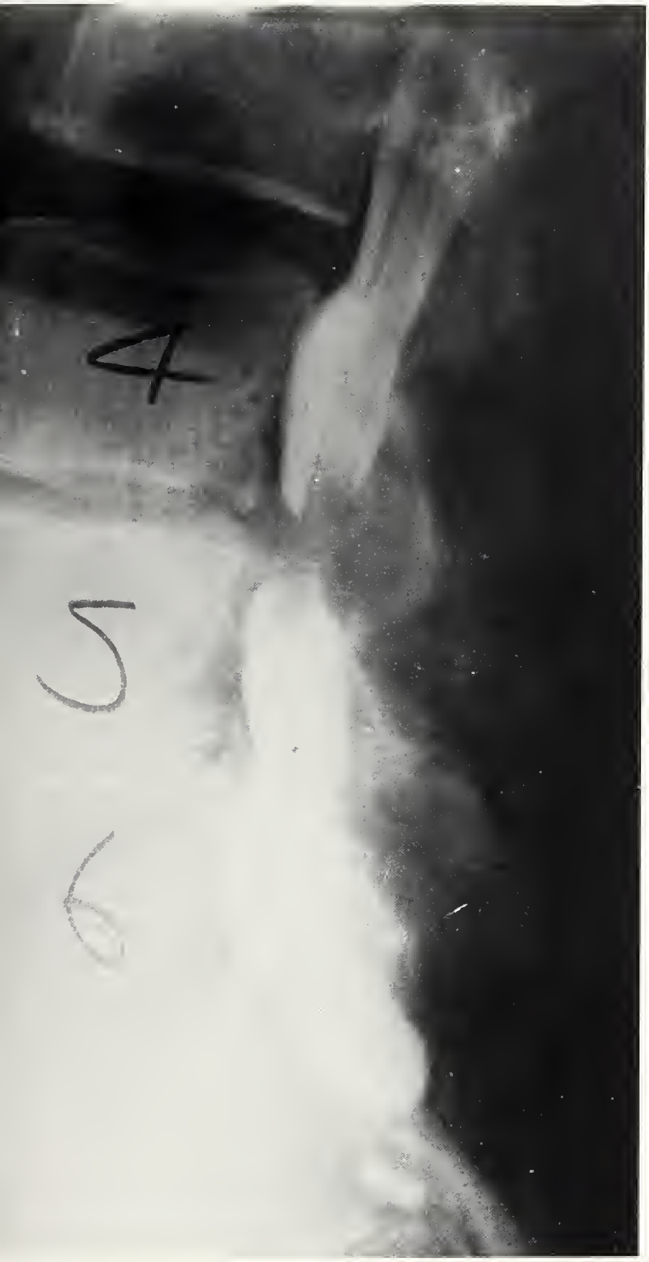

Figure 4b
se 4: Lateral metrizamide myelogram showing the stenosis
imarily at L4-5.

Conclusion

Four patients with lumbar stenosis presented with unusual clinical presentation, all were treated successfully with extensive decompressive laminectomy. The entity of lumbar stenosis should be entertained in the patients who present with hip, leg, knee or sexual problems in whom the more common diagnoses are excluded.

Acknowledgments:

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AM *Nutrition*

Determination of Nutritional Status in Aging Adults

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Abstract

Elderly persons, 65 years of age or older, must contend with a large number of changes including decreasing renal and respiratory function, chronic obstructive pulmonary disease, and acute respiratory failure. With advancing age there is also a higher incidence of chronic diseases, such as atherosclerosis and diabetes mellitus. Increasing evidence points to the importance of nutrition in the occurrence of and susceptibility to diseases like these. Nutritional assessment and support for these patients is critical. We have recently reviewed in detail nutritional assessment in the elderly.[1] This paper will summarize some measurements, uses and limitations of clinical, biochemical and anthropometric assessment in the elderly. Dietary assessment, while important, will not be discussed.

Emergency hospital admission of the elderly occurs frequently. Measurement of nutritional status of these acute admissions is advisable for many elderly are malnourished prior to admission. Protein-calorie malnutrition is being recognized more and more frequently among all hospitalized patients.[2] Health care professionals have become increasingly concerned with the nutritional care of hospitalized patients, especially when a patient has a hospital stay of two weeks or has major surgery. Ongoing nutritional assessment is crucial to detect and counteract developing protein-energy malnutrition in hospitalized patients, because of the catabolic effect of injury and disease on the body's metabolism and immune systems. A large percentage of all elderly people has been shown to have a low nutrient intake correlating with a low total calorie intake. With a low level of total food intake, essential nutrients are more likely to be deficient in the diet also, including selected vitamins and minerals.[3] (See table Clinical Nutrition Examination.)

Nutritional assessment is the first step toward developing a goal of providing optimal nutritional care for an individual. The various routines for nutritional assessment which have been suggested for use, basically rely on anthropometric measurements and selected clinical tests, including those of anergic and metabolic function. With the routine use of nutritional assessment, many problems have arisen as to the acceptability of existing standards and the lack of appropriate standards for the elderly population.[1]

Physiological Changes

There are a number of physiological changes that may significantly influence the nutritional requirements of the elderly person. Body composition changes throughout life with fat increasing, lean body mass decreasing and metabolically active tissues being slowly reduced. This reduction accounts for the fall in basal energy metabolism, which is often accompanied with an even greater reduction in physical activity in the aged. In the gastrointestinal tract, there is a reduction in gastric acidity and a slowing of intestinal motility.[4] Gastrointestinal deteriation may account for decreased efficiency on nutrient absorption and, in some instances, justify giving increased levels of nutrients or supplemental minerals and vitamins in the diet. (See Table.) Healthy elderly may also experience greater metabolic function changes compared to a young adult population. For instance, reduced glucose tolerance has been seen in the aged. This phenomenon has been associated with peripheral tissue glucose-uptake reduction. Insulin efficiency in the periphery may be impaired in the healthy elderly person. On the other hand hepatic glucose production mechanisms remain intact in the aging. The peripheral insensitivity to insulin indicates the importance of exercise in the elderly to aid in moving blood glucose into the peripheral tissues for use. Other factors which may effect an elderly person's intake or produce gastrointestinal dysfunction include poor dentition, constipation, diarrhea, urinary or fecal

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continence, decreased olfactory acuity, and impaired sion or hearing.[5]

Psychological, social and economic factors can be dversely affected, especially if an elderly person has a hronic disease producing undesirable decline in utritional status. Traditional, lifelong patterns of eating fect specific nutrient levels and stores. Diets of the derly as assessed by intake studies have been shown to e most deficient in energy, calcium, iron, and B omplex vitamins. (See Table.) Specific micronutrient roblems are often exacerbated by unbalanced or enerally inadequate traditional diets.[1]

ssessment Using Anthropometric Techniques

Anthropometry is the measurement of the variations f the physical dimensions and the gross composition of e human body at different age levels and degrees of utrition. Repeated anthropometric measurements ver a period of time can provide an index of an ndividual's response to changes in the environment, e., changes of weight and lean body mass. At the 1969 hite House Conference on Food, Nutrition, and ealth, the following recommendations on anthro-ometric measurements were recommended for elderly dults: weight, height, arm circumference, and triceps kinfold.[6]

Obtaining the correct height of an elderly individual is ften complicated due to the physical and anatomical hanges that occur with aging. Physical alterations with ging include changes in body stature, which are rimarily caused by a progressive decline in absolute eight. Shortening of the spinal column, due to a arrowing of disc and loss of height of individual ertebrae, is primarily responsible for the loss of stature at occurs with aging since it has been shown that the ng bones do not undergo a significant reduction in ze with age.[7] Another factor affecting height is urvature of the spine which gives an individual a unchbacked appearance, that is present in many derly persons. This condition may be due to eneralized osteoporosis. Severe osteoporosis may also ause the bones in the legs to bow. Measuring elderly ubjects for their heights may thus bring misleading esults. Bony chest breadth measurement by roent-enogram has been suggested as a useful indicator of ame size, fat free mass and relative fatness. Unlike ature, bony chest breadth remains stable with aging. he measurement can be expressed as weight/bony hest breadth ratio. Perhaps this measurement should eplace height in some cases, particularly where the utritional assessment of the elderly is concerned.

The weight of a person is the most commonly used ndicator of the body size which reflects adequate utriture. However, it has a limited use in the elderly ecause it does not distinguish between body size and omposition. A cumulative decrease in lean body mass ccurs with age, accompanied by an increase in adipose ssue.[8] Current evidence suggests that the increased mounts of fat are deposited primarily around internal rgans, especially in females while the amount of subcutaneous fat increases only slightly. The end result is a reduced ratio of subcutaneous fat to total body fat. After age 65 to 70, total body weight generally decreases without an increase in fat tissue. The table of standards that has been most commonly used to compare height/weight observations is the 1959 Metropolitan Life Insurance tables. The data from which these tables were derived were collected over a wide time span and are different from more recent surveys in the United States. The latter suggesting that, on the whole, the normal healthy American tends to be bigger and heavier than the 1959 tables suggest.[9] The Metropolitan Life Insurance tables have recently been revised, and the weights for the shorter men and women have been increased to more realistic levels. The tables have been only briefly described in news releases and require further evaluation. Master, et al. reported data on heights and weights of Americans age 65 years to 94 years and found that the percentage of overweight people declined and the percentage of underweight people increased steadily over the 3-year span. From their data, standard tables for heights and weights have been developed for this older population. However, these data are only representative of an elderly white population.

Triceps skinfold is an indirect measurement of adipose tissue stores, or body fat. It consists of measuring a double-layer of skin and subcutaneous fat at the middle point of the upper arm with skinfold calipers. The status of somatic protein stores, or lean body mass, can be estimated by calculating arm muscle circumference and arm muscle area from triceps skinfolds and arm circumference measurements. A combination of biceps, triceps and subscapular measurements have been found to be the most reliable measurements for females 50 years to 68 years whereas the combined measurement of triceps, subscapular and supra-iliac skinfold thickens has been more reliable in males of the same age group. Thus, skinfold measurements on the trunk (subscapular and supra-iliac) may be more reliable predictors of body fat in males, whereas extremity skinfold measurements (triceps, biceps and thigh skinfolds) seem to be more accurate in females. The utilization of multiple skinfold measurements may avoid some of the pitfalls that occur in relying on triceps skinfold alone in the elderly population. In addition to precise measurement procedure, the usefulness and validity of anthropometric evaluation depends upon the use of appropriate standards for data interpretation. Data from the Ten State Nutrition Survey[11] and from Jeliffe's work[12] are generally accepted as the two most representative standards of the U. S. population currently available. Unfortunately, both of these standards are based on data obtained from young to middle-aged adults and may not be totally adequate for use with elderly subjects.[1,12]

Biochemical Assessment

Evaluating nutritional status by biochemical measurements is normally a more objective and precise approach than using anthroprometric methods.

Biochemical changes are often reflected sooner than some other measurements of nutritional status. However, many biochemical parameters have been shown to be affected by age. For example, the creatinine/height index is used as a predictor of muscle protein status.[13] Creatinine excretion rates have been shown to decline by almost half from early adulthood to age 80. Thus, as norms based on standards developed for young adults are often being used, the severity of lean body mass depletion for the geriatric age group may be overestimated. Serum albumin levels accurately reflect a decline in protein status due to a decreased rate of synthesis. However, the various effects of disease on plasma proteins must be considered when assessing the elderly since there is an increased incidence of chronic disease in this age group.[14] Conflicting reports exist concerning whether or not total serum protein albumin is significantly depressed in the elderly. Another indicator of visceral protein status is serum transferrin, which has a shorter half-life than serum albumin and thus can show depressed levels before serum albumin. Hemoglobin and hematocrit values are often used to assess nutritional status, as anemia is frequently associated with malnutrition. With increased age however, a higher prevalence of decreased hemoglobin and hematocrit levels is noted. The fall in hemoglobin may result from a direct effect of senescence related to reduced lean body mass and decreased oxygen requirement, and thus may represent a normal physiological response to aging. Many of the immunological abnormalities described in severe malnutrition have also been ascribed to effects of senescence.[15] For instance, lymphocytopenia and anergy to skin test evaluation have been commonly used as indicators of protein-calorie malnutrition. While useful, some studies have reported that the incidence of anergy and lymphocytopenia also increase with advancing age. The similarity of the effects of the aging process and of protein-calorie malnutrition on immune function requires better development of standard values for various age groups.

Inasmuch as malnutrition can affect social and physiological functions, their impairment may also be an index of malnutrition. In 1976, the National Institutes of Science identified five areas of function that malnutrition most likely affects. They are: social/behavioral performance, disease response, physical activity and work performance, reproductive competence, and cognitive ability.[16] Current studies are underway to determine the extent to which these functional indicators may define moderate protein-energy malnutrition. Sensitive and reliable methods of assessing nutrition by functional indices, and realistic standards by which to do so remain to be developed and proven practical in the field.[16] In addition, more varied groups, including minority subgroups of the elderly U.S. population need to be surveyed in order to establish current and more accurate standards of all types for all segments of this age group.

Physicians and other health field personnel are becoming more aware of the aged population's increased susceptibility to nutritional problems. They are also experiencing a growing awareness of the unique aspects of nutritional assessment for the aged. These are desirable trends and will help to ensure adequate and appropriate nutritional care for the elderly.

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Table
Clinical Nutrition Examination

Clinical Findings	Consider deficiency of	Consider excess of
Hair, nails		
Flag sign transverse depigmentation of hair	Protein, copper	
Hair easily pluckable	Protein	
Hair thin, sparse	Protein, biotin, zinc	Vitamin A
Nails spoon-shaped	Iron	
Nails lackluster, transverse ridging	Protein-calorie	
Skin		
Dry, scaling	Vitamin A, zinc, essential fatty acids	Vitamin A
Erythematous eruption (sunburn-like)		Vitamin A
Flaky paint dermatosis	Protein	
Follicular hyperkeratosis	Vitamins A,C, essential fatty acids	
Nasolabial seborrhea	Niacin, pyridoxine, riboflavin	
Petechiae, purpura	Ascorbic acid, vitamin K	
Pigmentation, desquamation (sun-exposed area)	Niacin (pellagra)	
Subcutaneous fat loss	Calorie	
Yellow pigmentation spring sclerae (benign)		Carotene
Eyes		
Angular palpebritis	Riboflavin	
Band keratitis		Vitamin D
Corneal vascularization	Riboflavin	
Dull, dry conjunctiva	Vitamin A	
Fundal capillary microaneurysms	Ascorbic acid	
Papilledema		Vitamin A
Scleral icterus, mild	Pyridoxine	
Perioral		
Angular stomatitis	Riboflavin	
Cheilosis	Riboflavin	
Oral		
Atrophic lingual papillae	Niacin, iron, riboflavin, folate vitamin B_{12}	
Glossitis (scarlet, raw)	Niacin, pyridoxine, riboflavin vitamin B_{12}, folate	
Hypogeusesthesia (also hyposmia)	Zinc, Vitamin A	
Magenta tongue	Riboflavin	
Swollen, bleeding gums (if teeth present)	Ascorbic acid	
Tongue fissuring, edema	Niacin	

(Continued on next page)

Table
Clinical Nutrition Examination (Continued)

Clinical Findings	**Consider deficiency of**	**Consider excess of**
	Glands	
Parotid enlargement	Protein	
"Sicca" syndrome	Ascorbic acid	
Thyroid enlargement	Iodine	
Heart		
Enlargement, tachycardia high output failure	Thiamine ("wet beriberi)	
Small heart, decreased output	Calorie	
Sudden failure, death	Ascorbic acid	
Abdomen		
Hepatomegaly	Protein	Vitamin A
Muscles, extremities		
Calf tenderness	Thiamine, ascorbic acid (hemorrhage into muscle)	
Edema	Protein, thiamine	
Muscle wastage (especially temporal area, dorsum of hand, spine)	Calorie	
Bones, joints		
Beading of ribs (child)	Vitamins C,D	
Bone and joint tenderness	Ascorbic acid (subperiosteal	
Vitamin A		
(child) hemorrhage)		
Bone tenderness (adult)	Vitamin D, calcium, phosphorus (osteomalacia)	
Bulging fontanelle (child)		Vitamin A
Craniotabes, bossing (child)		Vitamin D
Neurologic		
Confabulation, disorientation	Thiamine (Korsakoff's psychosis)	
Decreased position and vibratory senses, ataxia	Vitamin B_{12}, thiamine	
Decreased tendon reflexes, slowed relaxation phase	Thiamine	
Drowsiness, lethargy		Vitamins A & D
Ophthalmoplegia	Thiamine, phosporus	
Weakness, paresthesias, decreased fine tactile sensation	Vitamin B_{12}, pyridoxine, Thiamin	
Other		
Delayed, healing and tissue repair (e.g., wound, infarct, abscess)	Ascorbic acid, zinc, protein	
Fever (low-grade)		Vitamin A

Modified from Weinsier, R.L. and C.E. Butterworth, *Handbook of Clinical Nutrition*. St. Louis: CV Mosby Company, 1981, pp. 30-31.

Oncology

Idiopathic Thrombocytopenic Purpura (ITP) In Pregnancy

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Introduction

Idiopathic thrombocytopenic purpura (ITP) is the most common immune thrombocytopenic disorder and has a peak incidence in young-to-middle-aged women. Although ITP is *not* more common in pregnant women *nor* intrinsically a worse disease in that setting, it is not unusual to be faced with the problems of managing ITP in pregnancy.[1-3] Depending upon the referral population, at least three to five such patients can be anticipated in a multidisciplinary hospital each year. It is therefore important to know how best to treat the mother and evaluate the risks to the unborn child. This review will summarize the published literature and provide recommendations for treatment.

Background

ITP was first recognized as an entity in 1735 and shortly thereafter in 1765 was first described in association with pregnancy. ITP is not the only possible cause of purpura in pregnancy. In 1943, Burnett[4] reviewed the findings in 68 pregnant patients. Common causes of purpura were drugs, infection, autoimmune diseases such as rheumatoid arthritis, and scurvy. ITP per se occurred in only seven percent of purpuric patients. Although scurvy is no longer common, important diagnostic considerations remain: autoimmune diseases (systemic lupus erythematosis or rheumatoid arthritis), thrombotic thrombocytopenic purpura (TTP), lymphoproliferative disorders, drugs, bacterial, viral, or protozoal infections, preeclampsia, or the recently described HELLP syndrome[5] (hemolysis, elevated liver enzymes, and low platelets). The major reviews of ITP in pregnancy have included a total of 173 pregnancies in 107 patients.[6-8] The data from these studies are an important reference source.

Management of the Pregnant Mother With ITP

This section is divided into two parts: a) management prior to delivery and b) problems associated with delivery.

(a) Management Prior to Delivery

First, it is essential to confirm the diagnosis of ITP. Normal to increased numbers of bone marrow megakaryocytes with peripheral thrombocytopenia is a critical feature. Other causes of peripheral platelet destruction should be excluded, particularly lupus erythematosis, drug reactions, TTP, and possible preeclampsia. Although presence of platelet-associated IgG antibody is confirmatory, the low specificity of this test makes it of little practical use for diagnosis.

Maternal management prior to delivery is very similar to that in other patients with ITP. No treatment should be instituted unless there is excessive bleeding or marked thrombocytopenia or the patient is undergoing preparation for surgery. Initial therapy should be with prednisone in a dosage of 1 to 2 mg/kg/day to attempt to control maternal thrombocytopenia. If there is not an adequate response to low-dose prednisone (1 mg/kg) and there were not major side effects, there may be an additional response to prednisone therapy in the dosage range 100 to 200 mg/day and this can be tried. A gradual tapering of the steroids over a minimum of three to four weeks should be undertaken after a response has been noted. Treatment with prednisone has virtually eliminated the maternal mortality previously associated with the ITP. Splenectomy is now rarely necessary. However, the use of prednisone does result in an increased incidence of hypertension, edema, and psychological side effects. These side effects are usually not a management problem although they can be in occasional patients.

In patients not responsive to steroids, having intolerable side effects from steroids, or requiring a large maintenance dosage of steroids, an alternative therapy should be considered. If the patient is in the first

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From: University of Arizona Cancer Center, 1501 North Campbell Avenue, Tucson, Arizona 85724. Reprint requests to Donald H. Berdeaux, M.D., 1501 North Campbell Avenue, Tucson, Arizona 85724.

trimester, no cytotoxic therapy should be used and splenectomy should be avoided unless absolutely necessary. Treatment with either plasmapheresis[9] or intravenous administration of gammaglobulin[10] can be considered. If the patient is in the second or third trimester, a trial of vincristine at 1.0 mg weekly or splenectomy with concurrent platelet support may be warranted. The use of cytotoxic therapy during pregnancy has been reviewed by Gilliland and Weinstein[11] and their review suggests that vincristine is less teratogenic than cyclophosphamide. If splenectomy is contemplated, the second trimester is preferred over the third trimester since during the third trimester the enlarged uterus renders the spleen relatively inaccessible and premature labor or abortion may be more easily initiated and simultaneous cesarean section may become necessary[2] (Figure 1). With adequate platelet transfusion support, splenectomy is usually not associated with major bleeding.[8,12] A platelet count of 50,000 to 100,000 cells/mm^3 is recommended to achieve adequate hemostasis for surgery. A method of determining the amount of platelet concentrates needed (usually 15 to 20 units) has been described by Angiulo, et al.[13] It should be noted that there is no correlation of fetal thrombocytopenia or survival with the presence or absence of the maternal spleen.[5] Maternal splenectomy is *not* indicated in an attempt to alleviate th thrombocytopenia of the fetus.

1. *Decision for treatment* - Treatment indicated for:
(i) Platelet count <20,000/mm^3
(ii) Excessive bleeding
(iii) Elective surgery

2. *Types of treatment* — Prednisone (or equivalent):
— *first choice*
— 1-2 mg/kg/day taken orally
— taper to required dose
Platelet transfusion: - *used for acute bleeding/ elective surgery*
— 10-20 units, i.e., large doses

If other treatment required (e.g., prednisone ineffective or not tolerated)*
I.V. gammaglobulin
— *useful for acute short-term effect*
— expensive
Plasmapheresis
— very brief benefit
Splenectomy
— avoid if possible
— 2nd trimester preferred (3rd trimester difficult)
Vincristine
— avoid if possible
Cyclophosphamide/Imuran®
— avoid if possible, *especially* in 1st trimester

**Danazol* has not been used during pregnancy and *should therefore be avoided.*

Figure 1
Management of the Pregnant Woman with ITP

(b) Problems Associated With Delivery

The most common complications are similar to thos of any patient with ITP—epistaxis, bleeding gum petechiae, and purpura. Less commonly, severe bleeding may be present. Maternal mortality with delivery i approximately two percent, with no deaths relate solely to ITP reported since 1950. There is, however, a increased risk of hemorrhage during the expulsiv efforts of the second stage of labor and bleeding fron lacerations or episiotomies. Post partum hemorrhage i related to the degree of thrombocytopenia with thirty three percent of patients with <100,000 platelets/mm having excess blood loss compared to four percent i patients with >100,000 platelets/mm^3.[7] There is no usually excessive uterine or placental hemorrhage a delivery.

Management of Problems Related to the Fetus

Since the IgG antibody which causes ITP can cross th placenta the fetus is usually also affected. Reported feta mortality has ranged from 0 to 30%.[7,8,12,14] O'Reilly an Taber[7] studied 133 fetuses delivered in 84 patients wit 129 pregnancies and found 24 deaths (18%) (Table 1) There were 114 (86%) live births, of which one half ha purpura and/or thrombocytopenia. There were onl five deaths post partum for an overall fetal survival o 82%. Of the 24 fetal deaths, 19 (80%) occurred prior t the onset of labor (13 stillbirths and six abortions) an five (20%) occurred post partum (three hemorrhagic an two nonhemorrhagic). There was a total of ten (42% hemorrhagic deaths (seven stillborns ^{9}ante-partum^0 an three post partum).

A general problem in managing the pregnant IT patient is that treatment for the mother is *not* equall effective for the fetus. Thus, both prednisone therap and splenectomy have not had a significant impact upo fetal mortality. However, a recent study by Karpatkin, et al.[15] showed increased fetal platelet estimates at birth i corticosteroids were given to the mother at least two weeks prior to delivery. Nonetheless, the rather unpredictable fetal effects of the disease and treatment make fetal management around the time of delivery most perplexing.

(a) Predictive Value of Maternal Platelet Counts

Most authors agree that the maternal platelet count is predictive of thrombocytopenia in the fetus.[7,14,16] (Table 2). A maternal platelet count of ≥100,000/mm^3 is associated with an incidence of 27% to 45% (mean, 40%) of infants having thrombocytopenia or purpura, whereas a maternal platelet count of <100,000/mm^3 is associated with a 74% to 79% (mean, 75%) incidence of having thrombocytopenia or purpura in the infants. As mentioned above, maternal thrombocytopenia also predicts an increased incidence of maternal post partum hemorrhage.

(b) Predictive Role of Anti-platelet Antibody

Patients with ITP have been shown to have a direct anti-platelets antibody bound to their platelets which

Table 1
Fetal Complications

24 Deaths/133 fetuses	(18%)	133 Fetuses delivered	(100%)
Stillborn	13(10%)	114 Live births	(86%)
Abortion	6(5%)	109 Survive	(82%)
Hemorrhagic	3(2%)	24 Fetal deaths	(18%)
Non-Hemorrhagic	2(2%)	19 Ante-partum	(79%)
		5 Post-partum	(21%)
Total Non-Hemorrhagic *	14(58%)		
Total Hemorrhagic +	10(42%)		

*Total non-hemorrhagic deaths included 6 stillborn, 6 abortion, and 2 post-partum.
+Total hemorrhagic deaths included 7 stillborn and 3 post-partum.
Adapted from O'Reilly[7].

enhances the destruction of these platelets either via lysis of platelets or phagocytosis by macrophages within the reticuloendothelial system.[17] An indirect or anti-platelet antibody circulating unbound in the patients' plasma has also been detected. Only the circulating indirect anti-platelet antibody is able to cross the maternal-placental barrier. As might be expected, only the levels of this indirect anti-platelet antibody accurately reflect associated fetal thrombocytopenia. Cines, et al.[18] demonstrated that 9 of 11 (82%) of infants had thrombocytopenia if an indirect anti-platelet antibody was detected in maternal plasma, whereas 11 of 13 (87%) of infants did not have thrombocytopenia (<150,000 platelets/mm^3) if the antibody was not detected in the maternal plasma. The two patients with false negative results had infants with 90,000 and 100,000 platelets/mm^3.

(c) *Predictive Role of Fetal Scalp Vein Sampling*

Scott, et al.[19] have reported the usefulness of fetal scalp vein samplings in fetuses of patients with ITP in helping to predict neonatal thrombocytopenia and the possible need for cesarean section. In ten normal fetuses there was no significant difference between the platelet estimate from fetal scalp vein samplings compared to that from cord blood. In their retrospective review of 98 neonates the authors found that there was no serious bleeding if the neonatal platelet count was >50,000/-mm^3, whereas there was a 28% incidence of serious bleeding if the neonatal platelet count was <50,000/-mm^3. They also noted a poor correlation between maternal and fetal platelet counts. Twelve patients were studied prospectively and at the time of early labor or induction of labor, an amniotomy was performed and a fetal scalp vein sample obtained. If the neonatal platelet estimate was >50,000/mm^3 (8 patients), a vaginal delivery was done unless an obstetrical reason for cesarean section was obvious. If the platelet estimate was <50,000/mm^3 or if there was an obstetric reason requiring a cesarean section, this procedure was carried out (4 patients). All thrombocytopenia and bleeding problems in the neonates were predicted correctly.

Table 2
Relationship of Maternal and Fetal Platelet Counts and Fetal Involvement

Author	Maternal Platelet Count (/mm^3) at Delivery	Infants with Thrombocytopenia or Purpura Number (Percent)
Peterson & Larson[16] 1954	>100,000	5/11 (45.5%)
	<100,000	29/39 (74.4%)
Territo, et al.[15] 1973	>100,000	6/22 (27.0%)
	<100,000	50/63 (79.0%)
O'Reilly & Taber[7] 1977	>100,000	9/23 (39.1%)
	Not stated	30/71 (42.3%)
	<100,000	29/39 (74.3%)

(d) *Method of Delivering the Fetus*

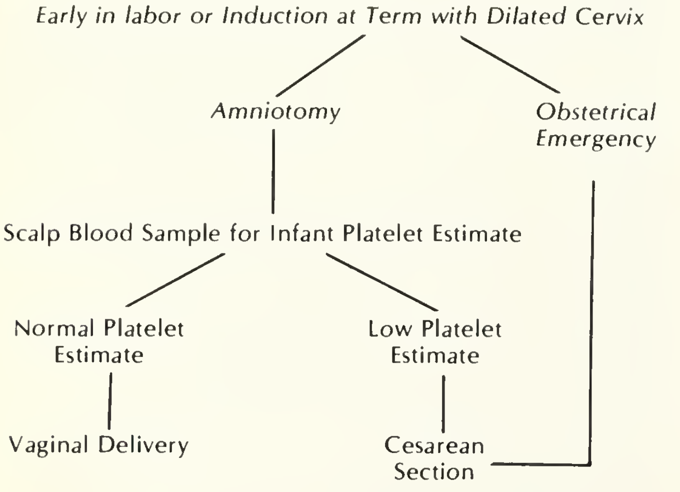
There is much debate in the obstetric literature as to which type of delivery is most beneficial to fetuses of patients with ITP. Laros[12] and Territo[14] (1973 and 1975) indicate that cesarean section is superior to vaginal delivery in preventing hemorrhagic deaths. However, Laros has also stated that there is no definite data in the literature to support this approach. Jones[8] (1977) delivered 42 fetuses (36 vaginally and 6 with low forceps) with no increase in complications or fetal deaths, although one infant developed a cerebral hemorrhage 60 hours after delivery and has moderate retardation. O'Reilly's[7] review (1977) of the literature also failed to show protective value of the cesarean section in preventing central nervous system hemorrhage and felt that an elective cesarean section is unwarranted. Perkins[2] (1979) suggested fetal scalp vein sampling and cesarean section only for marked fetal thrombocytopenia or for obstetrical reasons. Scott[19] agrees with Perkins' approach and has prospectively used the criteria (see above). He states, however, that even though there is an increased incidence of intracranial hemorrhage in thrombocytopenic infants, whether this risk is influenced by method of delivery is problematic, and to date this question is unresolved. Recommendations for the management of deliveries in ITP pregnancies are shown in Figure 2.

(e) Management of the Neonate after Delivery

Approximately one half of all neonates whose mothers have ITP will have thrombocytopenia and/or purpura. Thrombocytopenia is usually lowest two to four days after delivery and persists a minimum of three weeks. Approximately eight percent to ten percent of these neonates will require treatment for bleeding or marked purpura.[7] The most frequently used treatment is hydrocortisone given at a dose of 10 mg every 12 hours then prednisone 1 to 2 mg/kg/day for three weeks. Rarely, transfusion of platelet concentrates as two units every six to eight hours will be needed. In a life-threatening situation, an exchange transfusion may be beneficial. Splenectomy is *not* indicated since the neonatal thrombocytopenia is of limited duration.

Summary

Because of the controversy in caring for the pregnant patient with ITP and her unborn child, a systematic approach should be taken weighing the possible benefits as well as the potential risks or side effects to provide the best maternal and fetal care. Treatment recommendations are given in Figure 1. Recommendations as to the choice of the method of delivery are shown in Figure 2.



Modified from Scott[19]

Figure 2
Proposed Management of Deliveries in ITP Pregnancies

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Urology

The Artificial Urinary Sphincter^{tm}

State-of-the-Art Treatment for Urinary Incontinence

Joseph E. West, III, M.D.

Abstract

After a decade of clinical usage, the Artificial Urinary Sphincter has emerged as an important state-of-the-art treatment for urinary incontinence. Continuing refinements in the prosthesis, the surgical implantation techniques, and patient evaluation methods have yielded significant improvement in clinical success.

Keywords: Urinary Incontinence; Artificial Urinary Sphincter

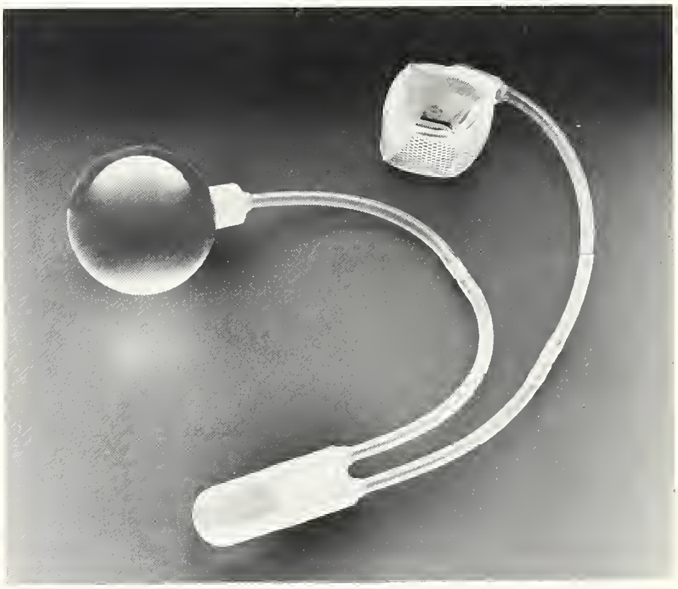
In patients who are incontinent of urine, shame and rejection often lead to depression, reclusiveness, and self-neglect. Negative consequences also spread from the patients to their immediate families and friends. As a result, most patients and their families turn to their physicians for help.

Unfortunately many physicians are immediately frustrated and somewhat insecure when asked to see an incontinent patient. But this frustration and insecurity are unnecessary today. The potential treatment options are now well understood and readily available.

The Artificial Urinary Sphincter^{tm}

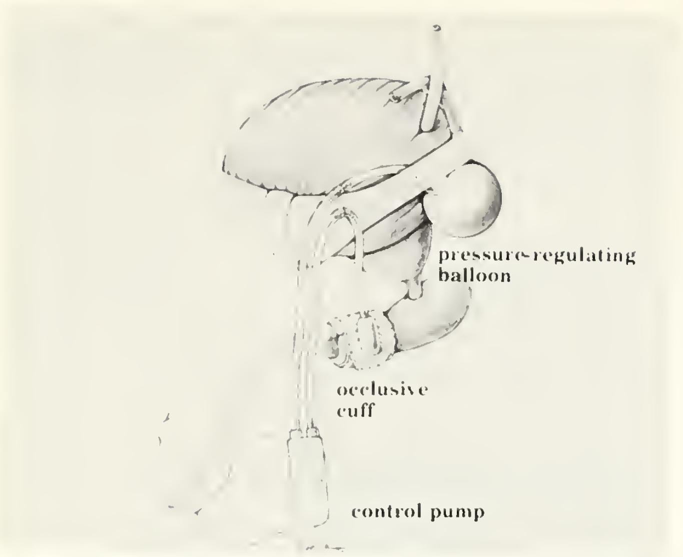
As a result of ten years of advancements in the field of prosthetic urology, diapers, catheters, drugs, and traditional urologic surgical procedures are not the physician's only options. It is now especially important for physicians to become familiar with the prosthetic management of urinary incontinence.

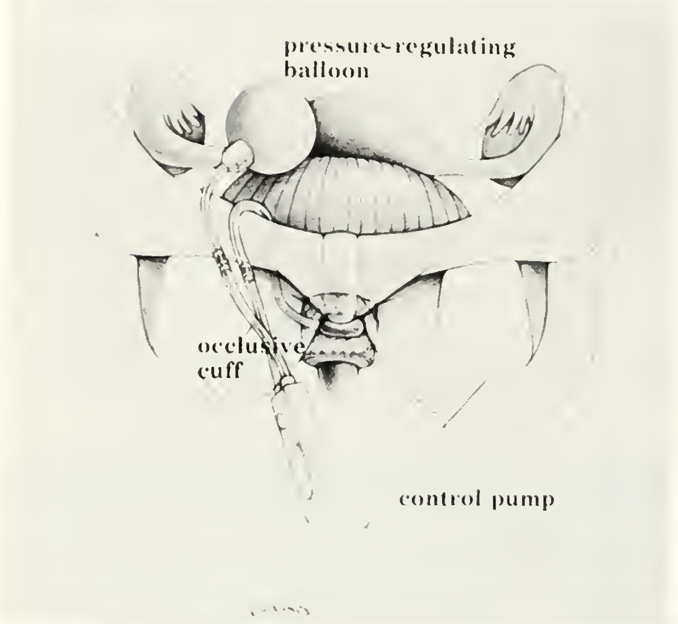
The prosthesis of choice for many incontinent patients is the Artifical Urinary Sphincter^{tm}. It was first implanted in 1972[1] and has since been placed in more than 4,000 children and adults. The cost of the prosthesis, surgery, and hospital stay ranges from $6,000 to $9,000, but third-party payers usually cover most of the cost. With more implanting centers reporting overall success rates (continence after implantation of the Artificial Urinary Sphincter) equal to or greater than 70% to 80%, this unique prosthesis is coming of age.

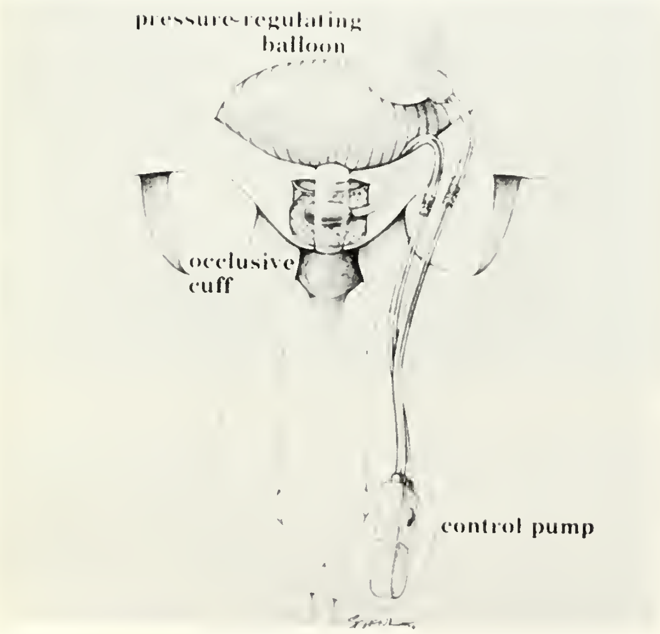


The Artificial Urinary Sphincter restores continence through an expandable cuff that applies a constant pressure around the urethra. Urologic surgeons position the cuff at the bulbous urethra in the majority of males with postprostatectomy incontinence, or at the bladder neck in females and in males who have had previous surgery or trauma near the bladder neck.

From: 10250 North 92nd Street, Suite 204, Scottsdale, Arizona 85258.







A pressure-regulating balloon controls the pressure c the fluid that expands the cuff. This balloon is a important innovation, because it allows the prosthesis not the patient, to control the closure pressure. If th patient controlled the closure pressure, he or she woul likely apply excessive pressure and damage the tissue a the cuff site.

To void, the patient simply squeezes a control assembly that the surgeon has placed in the scrotum o labium. Squeezing the control assembly forces the flui out of the cuff. The cuff relaxes, the urethra opens, an the urine leaves the bladder.

As soon as the patient stops squeezing the contro assembly, the fluid from the pressure-regulating balloo slowly flows back into the expandable cuff through a resistor in the control assembly. Within several minute the cuff returns to its original pressurized state and the patient is again continent.

During the past decade the manufacturer has gradually refined the prosthesis. The most recent model allows the physician to deactivate the implanted system without conducting another surgical procedure. This feature is especially helpful immediately after surgery, because the surgeon can deactivate the device to allow the tissues near the expandable cuff to heal. Once the tissues have healed, the surgeon can reactivate the prosthesis by pressing a portion of the control assembly.

Patient Characteristics

Now that the surgical implatation techniques and the technical quality of the prosthesis have evolved, improving the clinical success of the prosthesis has become increasingly dependent on proper patient selection. The Artifical Urinary Sphincter is intended for patients whose incontinence cannot be satisfactorily treated by nonsurgical techniques—diapers, catheters, or drugs.[2] In general this means it will aid a patient who is severely incontinent from any type of problem—neurogenic, anatomical, iatrogenic, or congenital. However, before physicians consider the implantation of the sphincter, they usually consider the patient's suitability for an alternative treatment.

These are the general characteristics I look for in a good candidate for the Artificial Urinary Sphincter:

1. *Incontinent due to an incompetent urethral closure mechanism.* A patient who is incontinent from an incompetent urethral closure mechanism is the ideal candidate for the Artificial Urinary Sphincter. This type of patient will usually have a bladder that can store and empty a normal amount of urine.

2. *Adequate bladder capacity, pressure, and function. Acceptable level of residual urine.* To empty the bladder adequately, the patient needs a satisfactory bladder pressure. In addition his or her bladder capacity should be normal, to allow satisfactory intervals between the acts of voiding. And the levels of residual urine should be low enough (less than 50 ml) to preclude the possibility of frequent bladder infections.

3. *Unobstructed urethra. Adequate urinary flow rate.* The passage through the urethra should be clear and

low the urine to empty in a satisfactory period of time, nd the urinary flow rate should be greater than 10 l/sec.

4. *Absent or controlled detrusor hyperreflexia.* If the atient experiences detrusor hyperreflexia while the rosthesis is activated, he or she will experience mporary incontinence. This occurs because the yperreflexic pressures exceed the cuff pressure and rce urine through the urethra. In some cases drugs will ifficiently control detrusor hyperreflexia to make the atient a suitable candidate.

5. *Sufficient manual dexterity, mental capacity, and otivation.* A few of the problems that induce inontinence such as spina bifida, spinal-cord injury, or ging, also produce physical, mental, and psychological icapacities. Therefore, I find it important to consider otential problems that might be severe enough to ihibit the patient's use of the prosthesis.

6. *Viable tissue at the cuff implantation site.* The tissue iat the cuff will surround should be well vascularized to romote adequate circulation once the cuff is activated. he tissue should also be nonfibrotic. Fibrotic tissue iight not open and close in response to the emptying nd filling of the cuff.

7. *Sterile urine.* Sterile urine is especially important in ie immediate postoperative period. Most surgeons vho implant the prosthesis begin parenteral antibiotic overage preoperatively and continue it postoperatively or 48 hours. If the patient is susceptible to frequent rinary tract infections that are difficult to control, he or ie might require more extensive preoperative prearation.

linical Examination

Urinary incontinence is a symptom and not a diagosis; therefore the evaluation of the incontinent atient should include a medical history, physical exam, ppropriate laboratory data, and cystoscopy.

The medical history should clarify the duration and everity of the incontinence; determine if the patient is ising drugs that might interfere with the control of oiding; and determine if the urinary tract has been ubjected to previous surgical procedures.

The physical exam should include palpatation of the ladder for evidence of distention or tenderness; nspection of the genitalia in both sexes; examination of he rectum with notation of anal sphincter tone, ulbocavernosal reflex, and prostatic size in males; and n some cases, a neurological exam of the lower exremities.

Laboratory testing should include a urine analysis; rine culture, if indicated; renal function studies; and erum glucose measurement to exclude renal insuficiency or diabetes.

Intravenous pyelography and cystography will reveal he presence of obstructions and other abnormalities. Cystourethroscopy is useful in diagnosing the presence of stones or tumors, urethral strictures, bladder neck contractures, prostatic enlargement, ectopic ureters, or urethral diverticulum. Urodynamic tests evaluate the bladder's capacity to store and empty urine. Among these tests, a cystometrogram (CMG) records changes in intravesical pressure as the bladder fills and can be used to assess bladder sensation. Electromyography (EMG) of the urogenital diaphragm, performed simultaneously with the CMG, often determines whether the activity of the detrusor and the external urethral sphincter are coordinated and normal. An additional test, the urethral pressure profile, measures urethral pressure and thus resistance to flow generated in the urethra.

A urinary flow rate can be obtained in both sexes by use of a Cunningham clamp or similar device in males and a "full-pull-flow" method in females.

Various combinations of these urodynamic tests of bladder and urethral function are employed in specific situations. Only rarely are all of them needed for evaluating one patient.

Clinical Results from Ten Years of Usage

The clinical success of the Artificial Urinary Sphincter has improved continually in ten years of clinical experience.

F. Brantley Scott, M.D., the first implanter of the prosthesis, considers the surgery successful when a patient is sufficiently dry to not require a pad. In 1978 he reported a 59% (10/17 patients) success rate for the earliest model of the Artificial Urinary Sphincter, which was introduced in 1972. At the same time he reported a success rate of 92% (22/24) from a more refined model that had been introduced in 1974 and further refined in 1977.[3]

In 1981 Scott and I, with our associates, reported an 85% (172/203) success rate for a large group of patients implanted from June 1978 to September 1980.[4] This series included patients who were incontinent secondary to myelomeningocele, radical prostatectomy, spinal trauma, transurethral resection of the prostate, epispadias/exstrophy, sacral dysgenesis, failed postoperative stress incontinence, and various other causes. Using a life-table approach for statistical analysis we found that 78% (26/33) of the patients who were followed for at least 24 months were continent. (We did not consider repairable mechanical problems as failures in this analysis.)

In 1981 Hanna reported a success rate of 83% (5/6) in children with neurogenic bladder dysfunction.[5] Two of Dr. Hanna's subjects were implanted after closure of an exstrophy of the bladder. It was one of these patients in whom the failure occurred. Also in 1981 Furlow reported an overall success rate of 91% (43/47).[6] This group included multiple etiologic factors. In 1982 Barrett and Furlow reported a 92% (22/24) success rate in patients with myelomeningocele. These patients were followed for 40 months.[7] And in 1983, Scott and J. Keith Light, M.D., reported a 70% (35/50) success rate in treating spinal cord injury patients[8] and a 95% (90/94) success rate in treating pediatric patients.[9]

Admittedly the Artificial Urinary Sphincter, a mechanical device, is subject to mechanical failure that is not related to surgical success or failure. In 1981 Scott and I, along with our associates, presented actuarial data describing the survival of each component of the Artificial Urinary Sphincter.[4] During a period of 24 months, only one of 204 implanted pumps failed mechanically, and only six of 209 pressure-regulating balloons failed. Eighty-nine percent of the cuffs were functioning 18 months after they had been implanted. Accordingly, we calculated that the reoperation rate due to mechanical failure was about 12 percent.

Because of the component nature of the device, when a mechanical problem occurs, the surgeon can again render the patient continent by doing a surgical revision.

The majority of surgical or medical failures result from erosion of the urethra. Surgeons can reduce the incidence of this complication by selecting a pressure-regulating balloon that exerts the minimal pressure that the patient needs to remain continent. Infection is a complication in any prosthetic surgical series, but in our series infections developed in only one to two percent of the patients.

Summary

After an extended period of clinical use, the Artificial Urinary Sphincter has proved to be a successful treatment for urinary incontinence in appropriate patients. Refinements in the mechanical design and in the surgical implantation techniques have yielded increasingly better success rates. As a result, it is important for physicians to become familiar with the diagnostic and surgical regimens that accompany this treatment method. In the future many more patients will benefit from this prosthetic alternative to urinary incontinence.

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Special Article

The Logistics of Information

Daniel Levinson, M.D.

Abstract

Successful management of the rapidly growing store of medical information is an essential skill for the health care provider. This paper describes the major sources o published information, discusses strategies for "keeping

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From: The Department of Family and Community Medicine University of Arizona College of Medicine; and the College o Nursing; Tucson, Arizona. Reprint request to Daniel Levinson, M.D. Department of Family and Community Medicine, Arizona Healt Sciences Center, Tucson, Arizona 85724.

›”, and details the growing importance of information anagement in medical education, especially life-long arning. The role of the personal computer in handling inical information is emphasized.

Key Words: Computers; education, continuing; lucation, medical; information services; publishing.

> *The Geometric progression of publication leads to the ›surd and impossible conclusion that there is coming a me when our libraries will become large cities and will ›quire the services of everyone in the world not ngaged in writing to catalog and to care for the annual utput.*
>
> *Dr. John Shaw Billings 1883*

Dr. Billings, one of the founders of the National brary of Medicine, astutely anticipated today's ›formation crisis: scientific knowledge is growing at an ‹ponential rate. During most of this century the umber of biomedical journals doubled every ten to fteen years.[1] (Figure 1) For the health care professional, vhose effectiveness depends on the ready availability of ccurate, up-to-date information, the current situation nay seem overwhelming: the human mind cannot etain even a small part of the growing mountain of nformation. Some insight into the elements involved in nanaging information is provided by the military concept of logistics—the production, distribution and ıtilization of essential materials. Indeed, a military concept seems an appropriate one to deal with the 'information explosion."

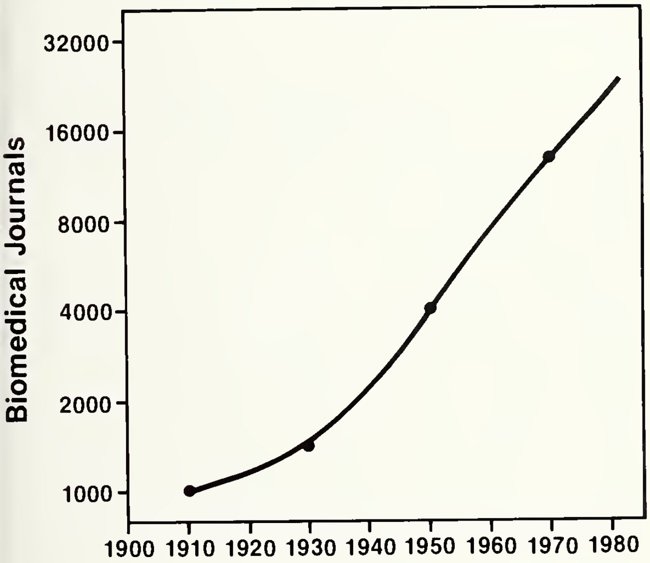

Figure 1

he biomedical literature has doubled every ten to fifteen ears.

nformation Production

The first of the logistical elements—production—is oday a condition of overproduction. The National Library of Medicine, for example, receives more than 23,000 journals yearly and indexes about 3,200, some 280,000 articles. (The Arizona Health Sciences Library receives about 3,000 journals yearly, ranking it ninth among U.S. medical libraries). Where do all of these journals come from? Refereed journals are the foundation of medical publication. These include general purpose journals such as the *New England Journal of Medicine* or *Journal of the American Medical Association*, with circulations in the hundreds of thousands; major speciality journals like the *Annals of Internal Medicine* having circulations in the tens of thousands; and a profusion of highly-specialized periodicals with as little as three hundred subscribers. These journals are the communication channels for documented research and responsible editorial comment. They play a unique role in the vitality of the medical profession.

Next are the controlled-circulation journals—the so-called "throw-aways"—such as *Patient Care* or *Hospital Practice*. These serve a different purpose—mostly providing review articles. Distributed free to a limited set of professional readers, they depend entirely on advertising revenues, and exist to make a profit for their owners. A few are listed in the *Index Medicus* and saved by medical libraries, but most are read once and discarded.

News magazines, such as *Medical World News*, and newspapers like *Medical Tribune* add to the flood of information. These publications abstract news from refereed journals and medical meetings, and report on national and international events of medical significance.

Books and monographs contribute their weight to the accumulation of medical information. The National Library of Medicine receives more than 16,000 titles annually. Our library acquires about 2,200 titles yearly, depending on budget and book cost-which is increasing at a distressingly rapid rate.

Other "production" sources of medical information include audiotapes, such as *Audio Digest*, and videotapes produced by a wide variety of educational organizations. Videodisks, with the ability to store tens of thousands of printed pages, are beginning to appear and may have a major impact on information storage and retrieval.

Distribution of Information

In a rapidly changing field like medicine, information is often quickly outdated; distribution of new knowledge must be rapid and dependable. Current methods of publication are not optimal. Even major refereed journals, with large editorial staffs and modern production equipment, need a minimum of four months from the time a manuscript is received to the time it appears in print. Journals with more modest means may have a backlog of articles more than a year old awaiting publication. For the news magazines, the publishing cycle is about three weeks, and medical newspapers need as little as one week. Shipping and delivery add a few days to several weeks to the total distribution time. Book publishing is a very slow process; one to three years of preparation time is required by the author, editor, publisher, and printer, and some texts are outdated by the time they are released.

Utilization

The third logistical element—utilization—presents the major challenge for the reader: how can anyone, even in the most limited speciality, keep up with the continuing torrent of new information? One study—the Hepatitis Knowledge Base[1]—suggests that the problem may not be as overwhelming as the numbers indicate. Several years ago researchers at the National Library of Medicine set out to determine what percent of the literature would have to be consulted to create a comprehensive research and clinical database for subject of general medical interest—they chose viral hepatitis. They found 16,000 articles in English alone in the ten-year period 1965-1975, more than they were willing to read, even in the service of science. Seeking a practical yet accurate approach, they examined the bibliographies of forty reviews written by hepatitis experts. These reviews cited only 575 unique articles, which the team did read, and from which they constructed a comprehensive database. The research team then considered how to update the database for the next two and one-half year period, during which another 5,700 articles had accumulated. Returning to the original 575 articles database, they realized that 80% of the articles were in just eighteen journals. These eighteen yielded 670 new articles, enough to create an accepatable update. This and similar studies have come to the conclusion that there is a medical "curve of diminishing returns" (Figure 2) after a point early in th curve; additional reading adds relatively little ne information. Questions have been asked along th following lines: "If 575 articles are as useful as 16,00 what are the other 15,000-plus doing out there? I anyone reading them?" A substantial number of published articles are never read, or at least never cite subsequently, suggesting that the medical literature ha a bad case of redundancy. Editor Arnold Relman, notin that 80% of articles rejected by the New England Journ of Medicine and the Journal of Clinical Investigatio were eventually published elsewhere, wonders whethe journals are filters or sponges?[3]

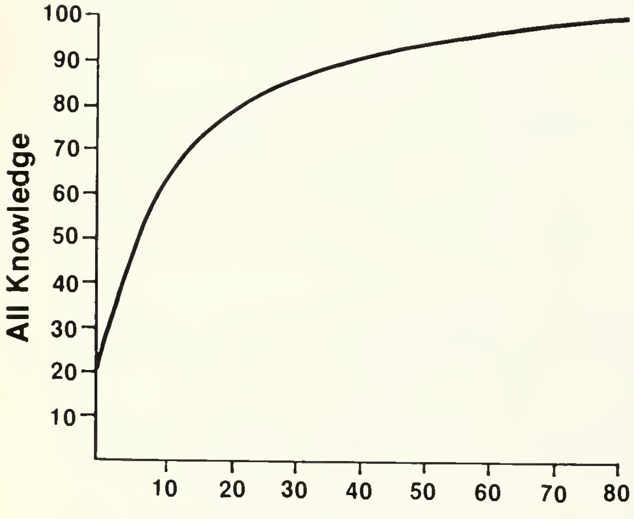

Figure 2
A medical "curve of diminishing returns." After a point early in the curve, additional reading adds relatively little new information.

Even if "keeping up" is possible, it can be formidabl Some approaches are individual journal subscriptions o frequent visits to the medical library; maintaining reprint file; and abstract services such as *Excerpt* *Medica* or the *Yearbook* series. Medical librarians offe subject searches of computerized literature database such as *MEDLINE*. Some libraries, and informatio services like the Institute of Scientific Information provide selective dissemination of information (SDI) t subscribers, a periodic listing of all new articles i specified areas of interest. Whatever the strategy fo personal reading, one thing seems clear; there must be principle guiding selection of articles read if anythin other than fleeting retention is to be achieved. Linkin reading to clinical cases in one's practice, of which mor will be said later, is one of the best ways to achiev relevance and meaningful learning.

The Personal Computer

The microcomputer can fundamentally alter the wa you manage information. With a personal computer yo can explore the medical literature from your home o office. Two services, *Knowledge Index* or *BRS/Afte* *Dark* will connect your computer with *MEDLINE* and scores of other databases, and even help you define the best search strategy. These information "utilities" are just the beginning of the computer's impact on information management. The computer itself can be a primary publication medium. An article can be entered into a computer network to be read and commented upon in a fraction of the time needed by conventional publication. Indeed, the idea of a scholarly work as a final, publishable entity may be replaced by an ongoing, constantly revised file of information of mutliple authorship. Electronic publishing is already altering news reporting methods. For example, the American Medical Association inagurated it's electronic mail services *MED/MAIL* (part of its AMA/NET program), as it so happened, on the day of the Tylenol tragedy. Physicians with microcomputers received accurate, detailed information far faster than was possible from the mass media. Electronic publishing raises major editorial and economic questions, but has enormous potential for facilitating timely information dissemination and dialogue.[4]

The medical journal of the future may be a small portable battery-powered "briefcase" computer able to cess literature databases anytime and almost any ace. Several units now on the market weigh four ounds, have a full-sized keyboard and all the circuitry ecessary to dial-up information utilities with just a ouple of keystrokes. At present, computers must be nked to a telephone line, but even this constraint may sappear. Several forms of mobile radio-telephones on available will enable you to access information atabases independent of telephone lines. Information ols like these will provide you with information to help nswer any medical question, and at the time when your atient's problem needs attention—at the hospital edside, in the office or even while you are on call at ome.

edical Education

What are the implications of these information sources for medical education? One thing seems ear—as clinical practice increasingly depends on cating information, rather than remembering it, a odern curriculum should teach information management skills. The emphasis of medical education should ift from information content to the process of nowing how to locate information when it is needed. nce the clinician is a competent information manager, e skill becomes the key to successful lifelong learning.

actice-linked Continuing Education

Three components of practice—the medical record, ontinuing education and the medical literature—are, should be, an integrated activity. Learning is most fective when associated with an actual patient oblem. An electronic medical record system capable both recording what takes place in the clinical ncounter and retrieving from the literature recent levant clinical information is a potent continuing ducation tool.[5] All the technological requirements of ch a system, including maintaining confidentiality, are ailable today. What is lacking is recognizing the nsatisfactory nature of today's inadequate records and ontinuing education programs, and a willingness to ommit the resources needed to create a modern, tegrated information system. The rewards will be nproved patient care, lasting knowledge and added me with patients for the unique interpersonal aspects patient care which can never be provided by a omputer.

cknowledgement:

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Are We Being Manipulated? The New Role of Chiropractic in the Health Care Field

Having been asked to debate a chiropractor on the radio by the Public Relations Director of our Medical Association, I was forced to become better acquainted with chiropractic theory and practice. The result of that educational process and my radio interview forms the basis of this editorial.

After asking practicing physicians their perception of chiropractic theory, it became apparent that most thought, as I initially did, that manipulation of the spine, as proposed by Palmer in the 1880's, was the method by which chiropractors treat disease. However, it soon became apparent to me that such was not the case.

Chiropractic manipulation of the spine as a way to cure illness has gradually moved toward a more enlightened realization that disease can be caused by other conditions besides impingement on nerves. The recognition of infectious disease, neoplastic processes and hormones, has led to a wider appreciation of disease in chiropractic thinking. The old traditional chiropractors who treat only by manipulation are slowly being outnumbered by those who claim to understand the pathophysiology of disease and thus purport to be able to diagnose the maladies that affect the human body. They feel that since many of these, i.e., obesity, hypertension, headaches, etc., are brought on by environmental factors, that they can through various counseling and manipulative techniques bring about prevention and/or resolution of some of these problems. They no longer claim to manipulate every patient, nor do they claim every patient needs manipulation. They treat patients with minor heart disease and hypertension, as well as those with diabetes. They feel they are quite capable of performing these functions even though they do not have a Degree in Medicine. They claim to have been better taught than prior chiropractors as they now have to graduate college and their classes are being taught by teachers who have medical degrees (M.D. and D.O.). Although they do not have hospital privileges and can't use hospital x-ray facilities, they feel that the availability of laboratory tests and in-house x-ray equipment enables them to make most diagnoses fairly reliably. They recognize that more sophisticated radiological procedures are not available to them, such as CAT scans and nuclear magnetic resonance imaging, but they feel that they are attempting to overcome this restriction by forcing legislation which will enable them to have hospital privileges. Spokespersons for this more active liberated enlightened group of chiropractors are young and articulate, and they make a fairly cogent argument for us to consider them "primary health care providers." Although they go by the name "chiropractor," I'm sure all of them would prefer to be known as "doctor" and would not be adverse under proper circumstances to be given equivalent degrees in medicine if the opportunity ever arose, e.g., osteopathi physicians. The fact that they are recognized by health care payors (Medicare, Blue/Cross) and by the federal government (by separate licensing board) has given them added impetus to seek legislative redress for what they feel to be unfair competition by American medicine, in particular the American Medical Association.

This experience has led me to believe that physicians need to become cognizant of the fact that chiropractors are no longer trying to cure disease by manipulating the spine, but are doing the same things physicians are doing in their offices, *caring for patients*. They tend to spend more time with the patient and get more personally involved. Although manipulative therapy is utilized for backaches and headaches, chiropractors today are clinical therapists using dietary regimes (vitamins, diets), and psychological emotional biofeedback techniques to help many of the ailments which affect our society. It is amazing how many sophisticated, educated and wealthy patients use chiropractors. A recent

**e prescribing, see complete prescribing information in
CO. literature or *PDR*. The following is a brief summary.**

RNING
drug is not indicated for initial therapy of edema or
ertension. Edema or hypertension requires therapy
ted to the individual. If this combination represents the
age so determined, its use may be more convenient in
ent management. Treatment of hypertension and edema
ot static, but must be reevaluated as conditions in each
ent warrant.

aindications: Concomitant use with other potassium-
g agents such as spironolactone or amiloride. Further use
na, progressive renal or hepatic dysfunction, hyperkalemia.
isting elevated serum potassium. Hypersensitivity to either
onent or other sulfonamide-derived drugs.

**ngs: Do not use potassium supplements, dietary or other-
unless hypokalemia develops or dietary intake of potas-
is markedly impaired.** If supplementary potassium is
d, potassium tablets should not be used. Hyperkalemia
ccur, and has been associated with cardiac irregularities. It
re likely in the severely ill, with urine volume less than one
ay, the elderly and diabetics with suspected or confirmed
insufficiency. Periodically, serum K^+ levels should be deter-
d. If hyperkalemia develops, substitute a thiazide alone,
t K^+ intake. **Associated widened QRS complex or arrhyth-
equires prompt additional therapy.** Thiazides cross the
ntal barrier and appear in cord blood. Use in pregnancy
es weighing anticipated benefits against possible hazards,
ling fetal or neonatal jaundice, thrombocytopenia, other
se reactions seen in adults. Thiazides appear and tri-
ene may appear in breast milk. If their use is essential, the
t should stop nursing. Adequate information on use in
en is not available. Sensitivity reactions may occur in
its with or without a history of allergy or bronchial asthma.
ole exacerbation or activation of systemic lupus erythe-
sus has been reported with thiazide diuretics.

utions: Do periodic serum electrolyte determinations (par-
rly important in patients vomiting excessively or receiving
teral fluids, and during concurrent use with amphotericin B
rticosteroids or corticotropin [ACTH]). Periodic BUN and
n creatinine determinations should be made, especially in
derly, diabetics or those with suspected or confirmed renal
iciency. Cumulative effects of the drug may develop in
nts with impaired renal function. Thiazides should be used
aution in patients with impaired hepatic function. They can
pitate coma in patients with severe liver disease. Observe
arly for possible blood dyscrasias, liver damage, other idio-
atic reactions. Blood dyscrasias have been reported in
nts receiving triamterene, and leukopenia, thrombocyto-
, agranulocytosis, and aplastic and hemolytic anemia have
reported with thiazides. Thiazides may cause manifestation
ent diabetes mellitus. The effects of oral anticoagulants may
creased when used concurrently with hydrochlorothiazide;
ge adjustments may be necessary. Clinically insignificant
ctions in arterial responsiveness to norepinephrine have
reported. Thiazides have also been shown to increase the
yzing effect of nondepolarizing muscle relaxants such as
curarine. Triamterene is a weak folic acid antagonist. Do
dic blood studies in cirrhotics with splenomegaly. Anti-
rtensive effects may be enhanced in post-sympathectomy
nts. Use cautiously in surgical patients. Triamterene has
found in renal stones in association with the other usual
lus components. Therefore, 'Dyazide' should be used with
on in patients with histories of stone formation. A few occur-
es of acute renal failure have been reported in patients on
zide' when treated with indomethacin. Therefore, caution is
ed in administering nonsteroidal anti-inflammatory agents
'Dyazide'. The following may occur: transient elevated BUN
reatinine or both, hyperglycemia and glycosuria (diabetic
in requirements may be altered), hyperuricemia and gout,
alis intoxication (in hypokalemia), decreasing alkali reserve
possible metabolic acidosis. 'Dyazide' interferes with fluores-
measurement of quinidine. Hypokalemia is uncommon with
zide', but should it develop, corrective measures should be
n such as potassium supplementation or increased dietary
e of potassium-rich foods. Corrective measures should be
uted cautiously and serum potassium levels determined.
ontinue corrective measures and 'Dyazide' should labora-
values reveal elevated serum potassium. Chloride deficit
occur as well as dilutional hyponatremia. Concurrent use
chlorpropamide may increase the risk of severe hypo-
emia. Serum PBI levels may decrease without signs of thyroid
rbance. Calcium excretion is decreased by thiazides.
zide' should be withdrawn before conducting tests for para-
oid function.

zides may add to or potentiate the action of other antihyper-
ive drugs.

etics reduce renal clearance of lithium and increase the risk
hium toxicity.

erse Reactions: Muscle cramps, weakness, dizziness, head-
e, dry mouth; anaphylaxis, rash, urticaria, photosensitivity,
pura, other dermatological conditions; nausea and vomiting,
hea, constipation, other gastrointestinal disturbances; pos-
hypotension (may be aggravated by alcohol, barbiturates,
narcotics). Necrotizing vasculitis, paresthesias, icterus,
creatitis, xanthopsia and respiratory distress including pneu-
nitis and pulmonary edema, transient blurred vision, sialade-
, and vertigo have occurred with thiazides alone. Triamterene
been found in renal stones in association with other usual
ulus components. Rare incidents of acute Interstitial nephritis
e been reported. Impotence has been reported in a few
ents on 'Dyazide', although a causal relationship has not
n established.

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gle Unit Packages (unit-dose) of 100 (intended for institu-
al use only); in Patient-Pak™ unit-of-use bottles of 100.**

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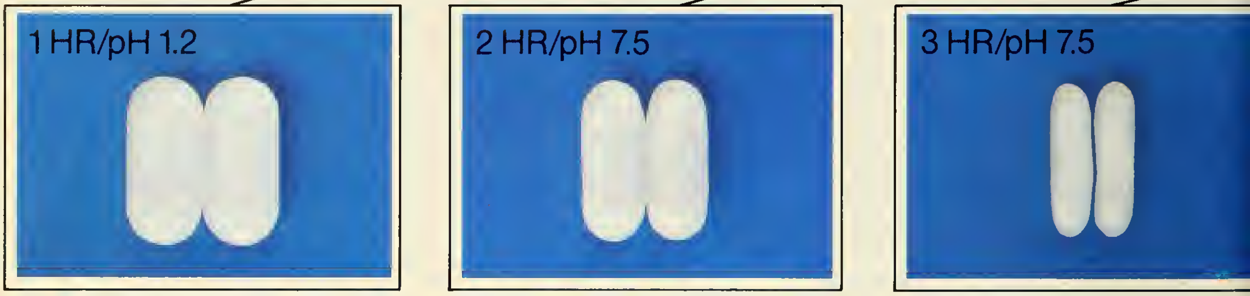
(ASPIRIN) ZERO ORDER RELEASE

Arthritis Therapy That Checks Out.

☑ Gastric distress is reduced. pH-dependent matrix virtually doesn't release in acidic stomach.

☑ ZORprin® (aspirin) is released in the alkaline environment of the small intestine.

☑ Zero-order release delivers drug at a constant rate, reducing serum peaks and valleys.



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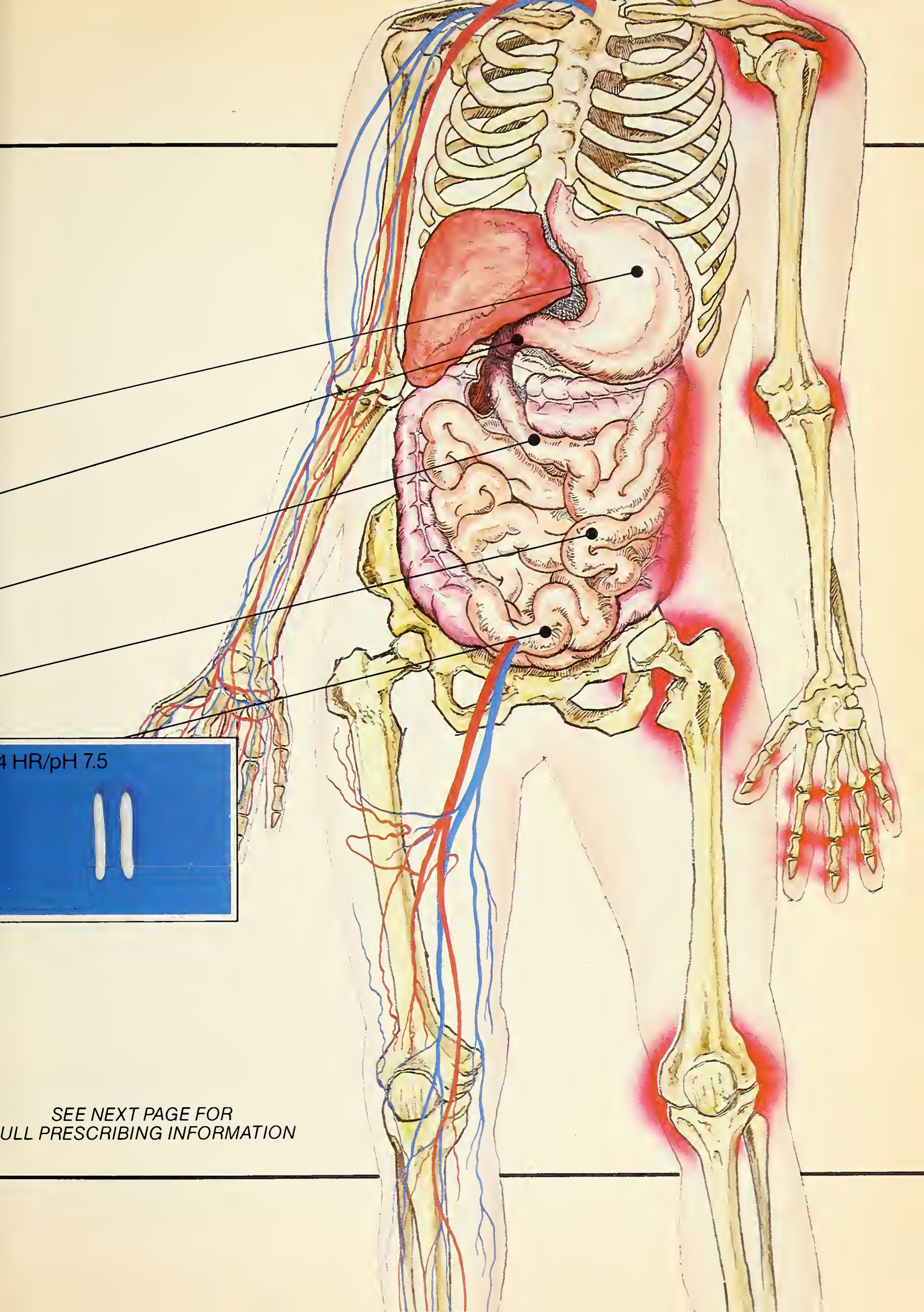
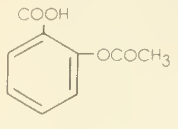


SEE NEXT PAGE FOR
ULL PRESCRIBING INFORMATION

ZORprin (ASPIRIN) Zero-Order Release

The structural formula of aspirin is:



DESCRIPTION: Each capsule-shaped tablet of Zorprin contains 800 mg of aspirin, formulated in a special matrix to control the release of aspirin after ingestion The controlled availability of aspirin provided by Zorprin approximates zero-order release, the *in vitro* release of aspirin from the tablet matrix is linear and independent of the concentration of the drug. ☐ **CLINICAL PHARMACOLOGY:** Aspirin, as contained in Zorprin, is a salicylate that has demonstrated anti-inflammatory and analgesic activity Its mode of action as an anti-inflammatory and analgesic agent may be due to the inhibition of synthesis of prostaglandins, although its exact mode of action is not known. ☐ Zorprin dissolution is pH-dependent. *In vitro* studies have shown very little aspirin to be released in acidic solutions, whereas, Zorprin releases the majority of its aspirin (90%) in a zero-order mode at a neutral to alkaline pH. It is this pH dependence of Zorprin that reduces direct contact between aspirin and the gastric mucosa, resulting in a reduction of its gastrointestinal side-effect potential ☐ Bioavailability data for Zorprin have confirmed that plasma levels of salicylic acid and acetylsalicylic acid can be measured 24 hours after a single oral dose. This substantiates a twice daily dose regimen. Multiple dose bioavailability studies showed similar steady-state salicylate levels for Zorprin as for conventional release aspirin using the same total daily dose. Long-term monitoring of salicylate levels showed no signs of accumulation once steady-state levels were reached (4-6 days). ☐ Studies of *in vivo* prostaglandin levels (PGE2) have shown Zorprin plasma levels of salicylic acid and acetylsalicylic acid to reduce PGE2 levels 14 hours after a single oral 800 mg dose while an equivalent dose of aspirin produced a reduction of PGE2 levels only through six hours. Zorprin's effect on prostaglandins other than PGE2 has not been determined ☐ Salicylates are excreted mainly by the kidney, and from studies in humans it appears that salicylate is excreted in the urine as free salicylic acid (10%); salicyluric acid (75%) salicylic phenolic (10%); acyl glucuronides (5%) and gentisic acid (<1%). ☐ **INDICATIONS & USAGE:** Zorprin is indicated for the treatment of rheumatoid arthritis and osteoarthritis. The safety and efficacy of Zorprin have not been established in those rheumatoid arthritic patients who are designated by the American Rheumatism Association as Functional Class IV (incapacitated, largely or wholly bedridden, or confined to wheelchair, little or no self-care). ☐ In patients treated with Zorprin for rheumatoid arthritis and osteoarthritis, the anti-inflammatory action of Zorprin has been shown by reduction in pain, morning stiffness and disease activity as assessed by both the investigators and patients. ☐ In clinical studies in patients with rheumatoid arthritis and osteoarthritis, Zorprin has been shown to be comparable to conventional release aspirin in controlling the aforementioned signs and symptoms of disease activity and to be associated with a statistically significant reduction in the milder gastrointestinal side effects (see ADVERSE REACTIONS). Zorprin may be well tolerated in some patients who have had gastrointestinal side effects with conventional release aspirin, but these patients when treated with Zorprin should be carefully followed for signs and symptoms of gastrointestinal bleeding and ulceration. ☐ Since there have been no controlled trials to demonstrate whether or not there is any beneficial effect or harmful interaction with the use of Zorprin in conjunction with other nonsteroidal anti-inflammatory agents (NSAI), the combination cannot be recommended (see **Drug Interactions**). ☐ **Because of its relatively long onset of action, Zorprin is not recommended for antipyresis or for short-term analgesia.** ☐ **CONTRAINDICATIONS:** Zorprin should not be used in patients known to be hypersensitive to salicylates or in individuals with the syndrome of nasal polyps, angioedema, bronchospastic reactivity to aspirin, renal or hepatic insufficiency, hypoprothrombinemia or other bleeding disorders Zorprin is not recommended for children under 12 years of age; it is contraindicated in all children with fever accompanied by dehydration. ☐ **WARNINGS:** Zorprin should be used with caution when anticoagulants are prescribed concurrently, since aspirin may depress platelet aggregation and increase bleeding time. Large doses of salicylates may have hypoglycemic action and enhance the effect of the oral hypoglycemics, concomitant use therefore is not recommended However, if such use is necessary, dosage of the hypoglycemic agent must be reduced The hypoglycemic action of the salicylates may also necessitate adjustment of the insulin requirements of diabetics. ☐ While salicylates in large doses have a uricosuric effect, smaller amounts may reduce water excretion and increase serum uric acid. ☐ USE IN PREGNANCY. Aspirin can harm the fetus when administered to pregnant women Aspirin interferes with maternal and infant hemostasis and may lengthen the duration of pregnancy and parturition Aspirin has produced teratogenic effects and increases the incidence of stillbirths and neonatal deaths in animals. ☐ If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus. ☐ Aspirin should not be taken during the last 3 months of pregnancy ☐ **PRECAUTIONS:** Appropriate precautions should be taken in prescribing Zorprin for patients who are known to be sensitive to aspirin or salicylates Particular care should be used when prescribing this medication for patients with erosive gastritis, peptic ulcer, mild diabetes or gout. As with all salicylate drugs, caution should be exercised in prescribing Zorprin for those patients with bleeding tendencies or those on anticoagulants. ☐ In order to avoid exacerbation of disease or adrenal insufficiency, patients who have been on prolonged corticosteroid therapy should have their therapy tapered slowly rather than discontinued abruptly when Zorprin is made a part of the treatment program. ☐ Patients receiving large doses of aspirin and/or prolonged therapy may develop mild salicylate intoxication (salicylism) that may be reversed by dosage reduction. ☐ Salicylates can produce changes in thyroid function tests ☐ Salicylates should be used with caution in patients with severe hepatic damage, preexisting hypoprothrombinemia, Vitamin K deficiency and in those undergoing surgery. ☐ Since aspirin release from Zorprin is pH dependent, it may change in those conditions where the gastric pH has been increased as a result of antacids, gastric secretion inhibitors or surgical procedures. ☐ **Drug Interactions:** (See **WARNINGS**) Aspirin may interfere with some anticoagulant and antidiabetic drugs. Drugs which lower serum uric acid by increasing uric acid excretion (uricosurics) may be antagonized by the concomitant use of aspirin, particularly in doses less than 2.0 grams/day Nonsteroidal anti-inflammatory drugs may be competitively displaced from their albumin binding sites by aspirin. This effect may negate the clinical efficacy of both drugs. Also, the gastrointestinal inflammatory potential of nonsteroidal anti-inflammatory drugs may be potentiated by aspirin. The combination of alcohol and aspirin may increase the risk of gastrointestinal bleeding. ☐ Aspirin may enhance the activity of methotrexate and increase its toxicity ☐ Sodium excretion produced by spironolactone may be decreased in the presence of salicylates. Concomitant administration of other anti-inflammatory drugs may increase the risk of gastrointestinal ulceration. Urinary alkalinizers decrease aspirin's effectiveness by increasing the rate of salicylate renal excretion Phenobarbital decreases aspirin's effectiveness by enzyme induction. ☐ **Pregnancy Category D.** See **WARNINGS** Section. ☐ **Nursing Mothers:** Salicylates have been detected in the breast milk of nursing mothers. Because of the potential for serious adverse reactions from aspirin in nursing infants, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the benefit of the drug to the mother. ☐ **ADVERSE REACTIONS: Hematologic:** Aspirin interferes with hemostasis. Patients with a history of blood coagulation defects or receiving anti-coagulant drugs or with severe anemia should avoid Zorprin. Aspirin used chronically may cause a persistent iron deficiency anemia. ☐ **Gastrointestial:** Aspirin may potentiate peptic ulcer, and cause stomach distress or heartburn. Aspirin can cause an increase in occult bleeding and in some patients massive gastrointestinal bleeding. However, the greatest release of active drug from Zorprin is designed to occur in the small intestine over a period of time. This has resulted in fewer symptomatic gastrointestinal side effects. ☐ **Allergic:** Allergic and anaphylactic reactions have been noted when hypersensitive individuals have taken aspirin. Fatal anaphylactic shock, while not common, has been reported ☐ **Respiratory:** Aspirin intolerance, manifested by exacerbations of bronchospasm and rhinitis, may occur in patients with a history of nasal polyps, asthma, or rhinitis. The mechanism of this intolerance is unknown but may be the result of aspirin-induced shunting of prostaglandin synthesis to the lipoxygenase pathway and the liberation of leukotrienes, *e.g.* slow-reacting substance of anaphylaxis. ☐ **Dermatologic:** Hives, rashes, and angioedema may occur, especially in patients suffering from chronic urticaria. ☐ **Central Nervous System:** Taken in overdoses, aspirin provides stimulation which may be manifested by tinnitus. Following initial stimulation, depression of the central nervous system may be noted ☐ **Renal:** Aspirin rarely may aggravate chronic kidney disease. ☐ **Hepatic:** High doses of aspirin have been reported to produce reversible hepatic dysfunction. ☐ **OVERDOSAGE:** Overdosage, if it occurs, would produce the usual symptoms of salicylism: tinnitus, vertigo, headache, confusion, drowsines, sweating, hyperventilation, vomiting or diarrhea. Plasma salicylate levels in adults may range from 50 to 80 mg/dl in the mildly intoxicated patient to 110 to 160* mg/dl in the severely intoxicated patient An arterial blood pH of 7.1 may indicate serious poisoning The clearance of salicylates in children is much slower than adults and should receive due consideration when aspirin overdosages occur in infants; salicylate half-lives of 30 hours have been reported in infants 4-8 months old. Treatment for mild intoxication should include emptying the stomach with an emitic, or gastric lavage with 5% sodium bicarbonate. Individuals suffering from severe intoxication should, in addition, have forced diuresis by intravenous infusions of sodium bicarbonate and dextrose or sodium lactate. In extreme cases, hemodialysis or peritoneal dialysis may be required. ☐ (*A plasma salicylate level of 160 mg/dl in an adult is usually considered lethal.) ☐ **DOSAGE & ADMINISTRATION:** *In order to achieve a zero-order release, the tablets of Zorprin should be swallowed intact.* ☐ *Breaking the tablets or disrupting the structure will alter the release profile of the drug.* ☐ *It is recommended that Zorprin be taken with sufficient quantities of fluids (8 oz. or more).* ☐ **Adult Dosage:** For mild to moderate pain associated with rheumatoid arthritis and osteoarthritis, the recommended initial dose of Zorprin is 1600 mg (2-800 mg tablets) twice a day Because of Zorprin's prolonged release of aspirin into the bloodstream, Zorprin tablets may be taken as a b.i.d. dose. Further adjustment of the dosage should be determined by the physician, based upon the patient's response and needs. Since it will take 4-6 days to reach steady-state levels of salicylic acid with Zorprin, it is recommended dosages be given for at least one week before further adjustment. In general, patients with rheumatoid arthritis seem to require higher doses of Zorprin than do patients with osteoarthritis ☐ **Zorprin is not recommended for children below the age of 12.** ☐ **HOW SUPPLIED: Zorprin Tablets 800 mg;** plain, white capsule-shaped tablets ☐ Bottles of 100 Tablets — NDC 0524-0057-01 ☐ **Caution:** Federal law prohibits dispensing without prescription. ☐ U S Patent No 4,308,251 ☐ **Manufactured and Distributed by: BOOTS PHARMACEUTICALS, INC., Shreveport, Louisiana 71106 U.S.A.**

12/8/83 0057-04

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informal survey in our office indicated that many patients go to a chiropractor but would not have volunteered it unless specifically asked.

As I see it, chiropractors have been very clever in moving from black magic to established medical modalities of thought, and as such are gaining acceptance in the health field. They no longer are "a cult" as they were in the past, and may be an important influence in the delivery of health care in the future with the economic restraints that will exist. What then are we to do within the medical community?

I think we need to recognize that there are people out there who need help which we are not providing. These people are searching for alternative forms of care for conditions for which we in organized medicine don't have a treatment. We see this in treating cancer patients, but perhaps it is no different in treating patients with severe anxiety, abdominal pain, or stress. We need to look at these kinds of patients and see where we are failing. Perhaps we have such dramatic armamentarian available to us to treat "serious" medical illnesses that we are unaware or perhaps look askance at patients who are just as "severely" ill, but for whom we have no good treatment except counseling. Even there, as we all know, the treatment can be time-consuming, expensive, and on many occasions without positive influence on ultimate behavior. If we do not want to serve this population of patients, then we need to recognize and support those who will. For in the long run, that is why we became physicians, to help people. If we need to join with those health care providers who are giving care to such patients, then so be it. We have accepted podiatrists, psychologists, optometrists; why not chiropractors? Whether their motivation is the same as ours is unclear, but as in every professional person, there are multiple motivating forces which influence behavior.

Again, this is one man's opinion and is open to attack from all sides.

Marshall B. Block, M.D.
Editor

Child Psychiatry: At the Crossroads

An estimated 10% to 15% of children in the United States suffer from a definable emotional disturbance and approximately 700,000 of these qualify as severely and chronically ill, maladapted, or disabled children. The Graduate Medical Education National Advisory Committee (GMENAC) report of 1980 indicates that the greatest need for expansion among medical specialties is in child psychiatry. This report recommends a threefold increase in child psychiatrists (from 3,000 to 9,000) by 1990. Child psychiatry's greatest challenge is to address this shortage through an increase in quality residency training positions and enhanced recruitment. The second major problem facing child psychiatry in the '80s is to define the goals of the profession and the population which physicians are best equipped to serve. In the past, child psychiatry has suffered an erosion of role and identity as a variety of other professionals have begun to treat emotionally disturbed children. Mildly and moderately disturbed or disabled children can be effectively treated by psychological, social, and behavioral approaches and the treatment of choice has not been clearly established.

The American Academy of Child Psychiatry and the Society of Professors of Child Psychiatry have devoted considerable time to needs assessment and the formulation of goals and strategies. A recent publication of the *American Academy of Child Psychiatry* entitled, "Child Psychiatry: A Plan for the Coming Decade" describes the current status and future direction of child psychiatry in clinical, educational and research areas. This report indicates that increasing clinical effort needs to be directed toward the most severely and chronically disabled children. This generally underserved population includes multiply handicapped children, institutionalized mentally retarded children, criminal or delinquent youth, and children with chronic or catastrophic diseases. This focus would aid in the role definition of the child psychiatrist as an individual trained to assess complex, multi-faceted problems and to expedite complicated intervention. In addition, the report emphasizes the necessity for child psychiatrists to assume the primary medical responsibility for these disturbed children, utilizing appropriate consultation and support services.

The Academy's report also suggests that child psychiatry residency programs need to emphasize the assessment and treatment of severely and chronically disturbed children and adolescents. In addition, the report specifies increased experience in consultation/liaison services with pediatricians and with school systems. It recommends that every child psychiatry residency program be affiliated with a general psychiatry program and that it be conducted in the context of other medical and surgical residencies as a requirement for accreditation. Thus, a full partnership can and should be maintained between child psychiatry and other branches of medicine.

Training for therapeutic involvement with less severely impaired children will continue to be implemented but will be of lesser priority than training with the severely and chronically impaired. The Academy's report tends to de-emphasize the child psychiatrist's involvement with less seriously disturbed, neurotic or socially maladjusted children and to minimize his/her commitment to social and political issues because of the report's effort to clarify roles and establish boundaries. It is the child psychiatrist who is preeminently equipped to care for the most serious and complicated cases. The current blurring of boundaries seems due to the many professionals of various backgrounds and disciplines attempting to address the broad and only partially resolvable issues of child welfare.

In the past, most training in child psychiatry occurred in independent child guidance clinics. The shift toward affiliation with departments of psychiatry has been associated with expanded research efforts. This is most gratifying but needs to be further enhanced. A recent National Institute of Mental Health communication was able to identify fewer than 30 full-time child psychiatric researchers in the United States. Support for research in child psychiatry is limited and the competition for available research dollars is intense. In addition, issues of informed consent and the inability of children to truly appreciate the ramifications of research severely limits the availability of any sample of children when drugs, environmental or intra-psychic intervention are proposed. In spite of these difficulties, training programs need to include the teaching of research methodology and should encourage the development of research projects.

The Child Psychiatry Training Program at the Arizona Health Sciences Center addresses many of the issues presented in the Academy's report. Child psychiatry residents have the opportunity to work with severely disturbed children who are mentally retarded, in adaptive education classrooms, in a correctional facility, and in residential treatment. Each child psychiatry resident spends six months sharing with staff the responsibility for the pediatric consultation-liaison service where he/she can be involved in the adolescent behavioral hematology-oncology, pulmonary, group practice, eating disorders, and pediatric-psychiatry clinic. During other phases of training, the child psychiatry resident consults with Tucson Unified School District No. 1, the Arizona Children's Home, Southern Arizona Mental Health Center's Children Unit, the Sex Abuse Treatment Unit and the Indian Health Service. The resident is trained in research methodology and may be involved in ongoing research on mother-infant attachment, eating disorders and compulsive athleticism, and hyperactivity.

Although the child psychiatry faculty is quite small, medical students are taught child psychiatry in both the basic science and clinical years. Third-year medical students may rotate through the Child Psychiatry Inpatient team and the fourth-year medical students may elect an experience in outpatient and community child psychiatry. Early exposure to child psychiatry in the medical school curricula enables interested students to explore career options within the field, thus enhancing recruitment.

The two-year child psychiatry residency program at the University received its accreditation in 1981 and is now the only such training program in Arizona. All positions have been filled since its inception. The program now produces two fully-trained child psychiatrists per year, a small but significant step toward fulfilling the challenge posed by the GMENAC report—that there be a threefold increase in child psychiatrists by 1990.

Alayne Yates, M.D.
Associate Professor
Psychiatry and Pediatrics
Louis J. Kettel, M.D.
Dean
College of Medicine

Reference

1. Psychiatry: A Plan for the Coming Decade, The Acadamy of Child Psychiatry.

CONFLICTS in Medicine

YOU'VE BEEN ON MANY DIETS — WHAT DO THE DIETS YOU'VE BEEN ON HAVE IN COMMON?
I CAN'T STAY ON THEM!
BERT WHIT-MAN

Arizona
Medicine

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Editor—

In analyzing the consequences of nuclear war, it becomes obvious that the concept of civil defense is meaningless. The proposed government civil defense plans and contingency hospital system plans represent a further waste of money and personnel. When these plans are fully analyzed it becomes obvious that prevention is the only ethical approach to the threat of nuclear war.

Part of the commitment of a physician is that of caring for the victims of disaster. However, in the face of the possibility of nuclear disaster, we must closely evaluate the meaning of this commitment. Once educated about the effects and sequelae of a nuclear exchange, it becomes quickly evident that the medical profession would have little to offer its survivors. In this context, we, as members of Physicians for Social Responsibility, are compelled to respond to the letter of September, 1983 by Dr. Jane Orient.

There are multiple inaccuracies and provocative if not inflammatory, statements in Dr. Orient's article, many of which strangely resemble the redbaiting tactics used by Ronald Reagan against P.S.R. as reported in *Reader's Digest* in July 1982. P.S.R. represents 25,000 physicians in the United States today. It embodies the moral concerns of health care providers of all political persuasions, conservative as well as progressive. The messages of P.S.R. are that: 1) nuclear war, even a "limited" one, would result in death, injury and disease on a scale that has no precedent in the history of human existence; 2) medical "disaster planning" for nuclear war is meaningless; 3) there is no effective civil defense; 4) recovery from nuclear war would be impossible and therefore, in summary, there would be no winners in a nuclear war.

P.S.R. does not take partisan political stances, but its members clearly support a weapons freeze and therefore the cessation of the endless drain on our economy by the military it represents as well as an end to immoral plans for the event of a nuclear war. To support the development of "first-strike" weapons, to suggest that a "limited" nuclear war could be fought and won, (and in doing so expose thousands, if not millions, of innocent civilians to the effects of a nuclear holocaust), or to delude our own citizens with hopes for any meaningful survival in the event of a nuclear attack are all considered by those of us in P.S.R. highly unethical acts.

Dr. Orient's analogies between coronary care units or cancer chemotherapy and defense planning for nuclear war do not hold water. C.C.Us do not prevent heart attacks. Investments in cancer chemotherapy, even when highly successful, should not preclude the more productive approach to lung cancer of prevention of smoking through education and therapy. Our resources are spent on the terminally ill stages of disease whereas successful preventive practices would save millions more lives.

In supporting the Civilian-Military Contingency Hospital System, Dr. Orient fails to acknowledge the data on which P.S.R. bases its position. The CMCHS requests that civilian hospitals voluntarily agree to contribute their hospital facilities on short notice for use by casualties resulting from a "limited" nuclear war. Such a war in Europe would result in tens of thousands of American casualties alone. The severe burns sustained in nuclear warfare alone would consume *all* of the nation's burn-bed resources, supplies as well as personnel, for but a fraction of the injured. The CMCHS is unrealistic and wasteful, let alone dangerously negligent of the ongoing needs for hospital care of our United States civilians.

A critical issue not explored by Dr. Orient is the most fundamental one: the meaning of survival and survivability in the context of nuclear war. The concept of survival must be analyzed both at the short-term phase; during the attack and period of fallout; and as a long-term concept including the survival of our society as well as effects on future generations.

Civil defense planning for this country focuses on the development of blast/fallout shelters and population relocation plans. If we ignore the most obvious issues: the devastation that would befall those in blast areas; the question of whether or not restrictions might be placed for entry into blast shelters, e.g. young versus old; the length of time necessary to effect a crisis relocation plan along with the disruption of society and tremendous transportation problems it would generate, a myriad of problems essentially medical in nature remain.

The current FEMA relocation plans, which by the way are not expected to be completed until the 1990s, deal little with assessments of the post-attack situation beyond the first 30 days. During the initial period of blast and high level fallout, shelters would need to provide for their inhabitants sufficient food, water, medical supplies for those burned and injured, and sufficient containers for human waste. Even if shelters were sufficiently insulated to protect against gamma radiation, it is unlikely that air filtration systems would be able to protect inhabitants from alpha and beta particles which would become internal emitters. Maintaining reasonable shelter temperatures could be a significant problem. Ongoing medical needs of a sheltered population would probably not be met, for it is unlikely that insulin, steroids, seizure and cardiac medications would be stockpiled, and with 80% to 90% of the pharmaceutical industry destroyed, these medications would no longer be available. Gastrointestinal diseases from radiation exposure, stress and infectious sources would present major problems of fluid management and waste disposal. In general, communicable and infectious diseases would be serious problems in the overcrowded setting of shelters. Thromboembolic disease due to sedentary posture; trauma; obstetric complications; the problem of corpse disposal; and psychological stress are among the issues that would face shelter inhabitants.

After radiation fallout had fallen to relatively low levels, those emerging from shelters would be confronted by other issues. Among the most major would be the accessibility of food, radiation effects, the emergence of diseases and ecological factors.

Food supplies would be limited both in short term access to stored grain as well as subsequent reduced harvest potential because of the loss of fuel, fertilizers, pesticides, equipment and farming skills in a contaminated terrain that would be contaminated by insects. Radiation would affect the survivors in many ways. Immediate effects on the immune and hematopoetic system would lower resistance to disease; there would be immediate and long term effects on fertility; and longer term effects would include carcinogenisis and the mutagenic effects on future generations.

Infectious disease and epidemics would be spawned by crowding, inadequate shelters, destruction of sanitary systems, absence of refrigeration, millions of corpses, overgrowth of insects and the reduced resistance to disease by survivors afflicted by malnutrition, stress, and radiation effects. The psychological effects influencing the will to live cannot be underestimated.

Independent of individual and societal problems would be alterations of the ecosystem. Full force nuclear war would destroy between 30% and 70% of the world's ozone layer. This would lead to blinding of all unprotected animal and human eyes, third degree burns on exposed skin surfaces after only moderate exposure, and loss of heat from the earth's surface. It is uncertain whether plant photosynthesis could be maintained. In addition the 10^{7-8} tons of dust and debris injected into the atmosphere would block the sun and lead to the "nuclear winter" where subfreezing temperatures would be present year-round. The combined effects of these factors have not yet been explored.

P.S.R. has never advocated that physicians should not care for victims of any disaster. But to delude the public into thinking that we could do anything meaningful in the event of a nuclear attack is, indeed, a "cruel hoax." To plan for a nuclear war is a highly unethical act. Civil defense cannot change what weapons can do.

Must we assume that nuclear war is inevitable and therefore plan for its consequences? Cannot our energy and resources be better spent in taking steps to assure that it will never happen? Must we continue to foster paranoia and fear reminiscent of the cold war of the 50's or are we capable of settling our differences in nonviolent ways? Do we choose military academies or peace academies? We are at the crossroads and we must choose.

Frances Shevitz, M.D.
Co-authors:
Barbara Warren, M.D.
Ana Marie Lopez
Physicians for Social Responsibility
Southern Arizona Chapter

Briefly Noted

David Ben-Asher, M.D., Tucson, an **Gilbert L. Sechrist, M.D.**, Flagstaff, hav been selected by Governor Bruce Babbitt to serve on the State Board of Medical Examiners.

Marshall B. Block, M.D., Phoenix, discussed "Medication Management" on the March segment of Health Highlights cosponsored by the Arizon Medical Association and SamCor's Video Services.

Arnold B. Calica, M.D., Phoenix, presented his manuscript, *"Intracerebral Arteriovenous Malfunctions"* at the 1984 Annual Meeting of the American Academy of Neurological Surgeons in San Francisc earlier this month.

David Dulaney, M.D., Sun City, was o one of two ophthalmologists performing cataract and intraocular le implantation operations via nationwid satellite television. The telecast, aired i 19 major cities on February 4, featured two-way communication between the surgeons and viewing medical professionals.

W. Walter Fox, M.D., Phoenix, discussed Stress at the February Health Talk cosponsored by Arizona Medical Association and Blue Cross/Blue Shield Arizona. **Gerald N. Goldberg, M.D.**, Tucson, was recently elected to Fellowship in the American Academy Pediatrics. The Academy, with a membership of 25,000 in the United States, Canada, and Latin America, is the Pan-American Association of physicians certified in the care of infants, children and young adults.

Ronald D. Gordon, M.D., F.A.C.S., Phoenix, has successfully completed th process for Certification of Special Qualifications in General Vascular Surgery. A subspecialty of general surgery, these Boards were offered for the first time in November 1983.

Stuart M. Gould, Jr., M.D., Phoenix, will serve as Chief of Staff for Camelback Hospital in 1984. Other Arizona Medical Association members who hold staff positions are: **Drs. Harri D. Murley** and **Floyd Templeton**, Phoenix, and **Dr. James E. Campbell**, Glendale, who are Members of the Executive Committee at Large.

John R. Green, M.D., was recently honored by supporters and staff of Barrow Neurological Institute for his many years as chief of neurosurgery at Barrow. Dr. Green, a former editor of **Arizona Medicine**, helped found the Barrow Institute in 1959.

Philip Keen, M.D., Prescott, was atured in an article describing his ecialty, Pathology, in a recent issue of e Prescott Courier.

Drs. Clyde W. Kurtz and **Laurence M. nkner**, Phoenix, were among four nelists discussing health care costs at recent program sponsored by the merican Association of University omen, the League of Women Voters Arizona, and the Business and ofessional Women's Clubs.

Clinton F. Merrill, M.D., Casa rande, was the guest speaker at a cent meeting of Alpha Xi Chapter, eta Sigma Phi Sorority. Dr. Merrill oke on "How to Choose a Physician."

Drs. Louis M. Newton and **Paul L. nger**, Phoenix, are among the five ew members elected to the Board of irectors of SamCor. Dr. Newton also rves on the Board of Directors of the nerican Cancer Society and is a past ember of the Hospice of the Valley oard of Directors. Dr. Singer has rved as Chief of Staff of Good maritan Medical Center and is a rmer Arizona State Senator as well as member and chairman of the Arizona oard of Regents.

Robert Westfall, M.D., Phoenix, was stalled as president of the Maricopa ounty Medical Society in January. ther officers include: **Drs. William ohnert,** vice president, **Norman hompson**, secretary, and **Paul Petelin**, easurer.

The Arizona Medical Association elcomes the following new members.

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at Toledo - 1977

Maricopa
Alfred J. Faber, M.D.
Family Practice
13210 Castlebar Drive,
Sun City West
Stritch University, Loyola - 1944
Federico T. Florendo, M.D.
Thoracic Surgery
222 West Thomas Road,
No. 410, Phoenix
University of Tennessee - 1973
Ronald Goldblum, M.D.
Internal Medicine/Rheumatology
334 West Tenth Place, Mesa
Case Western Reserve University,
Ohio - 1969
William J. Howard, M.D.
Internal Medicine
1111 East McDowell Road, Phoenix
University of Pennsylvania - 1964
Stephen Leonard, M.D.
Cardiovascular Surgery
2600 East Southern Avenue, Tempe
Duke University - 1973
T. Glendon Moody, M.D.
Ophthalmology/Family Practice
4416 North Scottsdale Road,
No. 455, Scottsdale
University of British Columbia - 1974
Larry Pass, M.D.
Internal Medicine
550 West Thomas Road,
No. 211-B, Phoenix
Mount Sinai School of Medicine - 1978
Raj Singh, M.D.
Neurology
5040 North 15th Avenue,
No. 301, Phoenix
Medical College of Amritsar,
India - 1972
Mary G. Warner, M.D.
Internal Medicine/Cardiology
4800 North 22nd Street, Phoenix
University of Michigan - 1968
Gary H. Weber, M.D.
Internal Medicine
333 East Virginia, No. 104, Phoenix
Pennsylvania State University - 1974

Mohave
William F. Binder, M.D.
Orthopedic Surgery
1801 Mesquite Avenue,
Lake Havasu City
University of California
at Los Angeles - 1972
Robert A. Richardson, M.D.
General Practice
1060 Highway 75, Riviera
University Autonoma of
Guadalajara, Mexico - 1977
Nick Rizos, M.D.
Obstetrics/Gynecology
1945 Mesquite Avenue, No. C,
Lake Havasu City
University of Toronto - 1978

Yuma
Philip Bakody, D.O.
Radiology/Oncology
2451 South Avenue, A, No. 7, Yuma
College of Osteopathic
Medicine and Surgery
Des Moines, Iowa - 1973
Emilia Matos, M.D.
Pediatrics
1150 West 24th Street, No. D, Yuma
UNPHU, Santo Domingo - 1977
Stephen A. Wallace, M.D.
Anesthesiology
1452 South Gateway, Yuma
University of Missouri - 1980

Service Member
Cochise
Ralph J. LaNeve, M.D.
Pediatrics
U. S. Army Hospital
Department of Pediatrics,
Fort Huachuca
University of Pittsburgh - 1955

Resident Member
Pima
Peter R. Nash, M.D.
Internal Medicine/Aerospace
Medicine, THMEP,
Tucson
Creighton University,
Nebraska - 1975
Student Member
University of Arizona
Susan Maline

LEGISLATIVE NEWS

ArMA Hosts Political Education Seminar

The Arizona Medical Political Action Committee (ArMPAC) and the American Medical Political Action Committee (AMPAC) cosponsored a special one day Political Education Seminar at the Arizona Medical Association building on Saturday, February 18. Thirty physicians and auxilians received an intensive lesson in how to better understand the political system and how to become a much more effective participant.

Throughout the day, the participants heard from Michael Dunn, a Washington, D.C. political consultant; William N. Neubauer, M.D., chairman of ArMPAC; John Smith, M.D., past chairman of AMPAC; Mark Hagood, AMPAC field representative; and Senator Robert Usdane, Majority Leader of the Arizona State Senate.

The seminar combined an interesting format which included audiovisual presentations and a political campaign simulation game that was exciting and educational. In addition, each participant received a seminar handbook and an informational guide to practical politics.

Physicians and Legislators Get Better Acquainted

On February 22, Arizona Medical Association's Board of Directors hosted a reception at the Phoenix Country Club honoring members of the Arizona State Legislature. Representatives from ArMA's Board, Legislative Committee, the ArMPAC Board and Auxilians met with nearly 50 State Senators and Representatives. This was the second reception to be hosted by ArMA in an attempt to give physicians an opportunity to become more involved in the legislative arena and to show legislators that physicians have an active concern about what is happening at the state capitol.

Continued on next page

Seminar participants learned more about the citizens' role in legislative policy making.

During a break, Lawrence Green, M.D., Richard Collins, M.D., and Ralph V. Wilson, M.D., share ideas.

W. Scott Chisholm, M.D., (center) talks with Senate Health Committee Chairman Carl Kunasek (left) and Senator Pete Corpstein (right).

Continued on page 26

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J-4044 January 1984

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If you still believe in me, save me.

For nearly a hundred years, the Statue of Liberty has been America's most powerful symbol of freedom and hope. Today the corrosive action of almost a century of weather and salt air has eaten away at the iron framework; etched holes in the copper exterior.

On Ellis Island, where the ancestors of nearly half of all Americans first stepped onto American soil, the Immigration Center is now a hollow ruin.

Inspiring plans have been developed to restore the Statue and to create on Ellis Island a permanent museum celebrating the ethnic diversity of this country of immigrants. But unless restoration is begun now, these two landmarks in our nation's heritage could be closed at the very time America is celebrating their hundredth anniversaries. The 230 million dollars needed to carry out the work is needed now.

All of the money must come from private donations; the federal government is not raising the funds. This is consistent with the Statue's origins. The French people paid for its creation themselves. And America's businesses spearheaded the public contributions that were needed for its construction and for the pedestal.

The torch of liberty is everyone's to cherish. Could we hold up our heads as Americans if we allowed the time to come when she can no longer hold up hers?

Opportunities for Your Company.

OFFICIAL SPONSOR
LIBERTY

You are invited to learn more about the advantages of corporate sponsorship during the nationwide promotions surrounding the restoration project. Write on your letterhead to: The Statue of Liberty-Ellis Island Foundation, Inc., 101 Park Ave, N.Y., N.Y. 10178.

Save these monuments. Send your personal tax deductible donation to: P.O. Box 1986, New York, N.Y. 10018. **The Statue of Liberty-Ellis Island Foundation, Inc.**

STATUE OF LIBERTY—ELLIS ISLAND CENTENNIAL CAMPAIGN
BUSINESS PRESS AD NO. SOL-1603-83—7" × 10" (110 Screen)
Volunteer Agency: Kenyon & Eckhardt, Inc. Volunteer Coordinator: Sharon E. Baum, Chemical Bank

BP-SPEC
1983

ArMA President, Pete Robles, M.D., (right) greets House Health Committee Chairman Bart Baker and Mrs. Baker.

Robert Westfall, M.D., Maricopa County Medical Society President, and Sylvia de Freitas, ArMA Auxiliary Legislative Chairman, listen to Senator Tony Gabaldon (right).

Senator Jacque Steiner being lobbied by ArMA President-elect Earl Baker, M.D., (left) and Past President John Clymer, M.D.

Library Talk

From Endemic to Epidemic: Theft and Mutilation of Books and Journals

Bertha R. Almagro

"He possessed a library, but it would have shocked any bibliophile. There were technical works, but annotated, mutilated, mauled and gangrenized. Jackson was known to borrow from his colleagues, tear out the relevant pages and omit the return of the book. His reading technique is well known, he was liable to tear the book in two and stuff each half into the left and right pockets. As each leaf was read it was discarded."[1]

The "passionate" reader described in the preceding lines, is none other than the renowned neurologist John Hughlings Jackson (1834-1911), a man capable of striking panic in the hearts of the most courageous librarians!

Jackson's "peculiar" reading habits have unfortunately not been uncommon throughout history, and reports abound on the pernicious habits of library users. One such report is exemplified by the papal bull issued by Pope Nicholas V (1447-1455), excommunicating anyone who did not return within forty days books belonging to the church.[2] Another example refers to the libraries of the Massachusetts Medical College and Massachusetts Medical Society, the former claiming that in 1822 the library numbered 301 volumes but many of them could not be found; while the latter claimed 744 volumes in 1850, 280 of which were missing.[3] It seems as if the seekers after learning were by far outnumbered by those who went for plunder.

This situation is presently prevalent, as evidenced by continuous references made in the library literature. Theft and mutilation of library material have become an epidemic of alarming proportions, causing libraries annual losses of millions of dollars. Book theft alone is running as much as $50 million a year. If to this is added the cost of replacing mutilated volumes the figure becomes even more alarming, particularly when allocation of library budgets has not been responsive to the demands imposed by rising book and journal prices. Justification of these insidious practices have been blamed in open access, library design, lack of security precautions, failure of existing security systems, the high price of books and journals, and finally the failure of librarians to confront individuals and report them, to avoid embarrassment and unpleasant publicity. Regardless of the causes, these losses represent a drain on resources which ultimately translate into a serious threat that undermines the quality of services to the research community.

The impossibility of replacing lost and mutilated material due to lack of sufficient funds, or to the fact that the items are no longer in print, greatly impairs the quality of the collection and makes the library dependent on the resources of other institutions. The cost involved in interlibrary loan transactions and delayed access to needed material are but two corollaries brought about by mutilation and theft.

The library literature has recently been reporting an alarming rise in the theft and mutilation of books and journals, and at one institution a yearly mutilation rate of 15% of the issues available on the shelves was reported.[4] Another library decided to wage a campaign against journal mutilation, raising awareness of the problem by listing in its newsletter the *ten most mutilated journals* from September 19 to May 1983.[5] Unfortunately, our librar is not immune to this epidemic, and w have witnessed an increase in the number of books and journals which have disappeared or have been mutilated. In one instance, an entire chapter was ripped out from a book which had just been purchased and placed in the "Display Section for Ne Books Received." Ironically the chapte torn dealt with *stress*. The cost of replacing missing issues or volumes fo titles from the journal collection can b astronomical. For example, a single issue of *Applied Biochemistry and Microbiology* costs $100.00; *Biochemistry*, $100.00; *American Journ of Physiology* $45.00; *Bulletin of Experimental Biology and Medicine of USSR*, $100.00; Journal of Cell Science $77.00; Doklady Biochemistry, $100.00 and so on.

The additional expenditure created by these thoughtless acts, as well as th inconvenience caused to the users cannot be stressed enough. The availability of an adequate number of photocopying machines should suffice to curb the greed of those who feel they must possess the desired information all for themselves. Also, responsive circulation policies that allow for sufficient time to make use the needed material should be deterrent enough. The University of Arizona Health Sciences Center Librar is open 24 hours, thus providing the kind of access and service that make these acts totally unjustified.

We will not go the extreme of dispensing excommunications, but we want to make a strong appeal to all th John Hughlings Jacksons of this world and request that they show a greater sense of responsibility by helping libraries to preserve the integrity of their collections so they can provide the support and services they were created for.

References

1. The Black Hole and Other Essays. Macdonald Critchley, ed. London, Pitman, 1964. p. 130.
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4. Gougke MN: Periodical mutilation: The insidious disease. *Lib J* 1980;16:1795-1797.
5. News, notes and resources. *Amer Lib* 1983;10:651.

From: Assistant Librarian for Processing Services, University of Arizona Health Sciences Library, Tucson, Arizona 85724.

Memorium

Sitterley, M.D.

nuary 28, 1984

We are gathered here this afternoon nder a shadow. A shadow of grief, and ss, and bereavement. If we take any adow and trace it far enough, we see at it is only the dark side of a bright oject. When we trace the shadow that s fallen across our lives today, it leads to the bright object of Jay Sitterley. is diminutive man cast a long shadow ross all of our lives. He was husband, ther, grandfather, doctor, medical lleague, Scout leader, concerned tizen, hunting buddy, fishing crony, ory teller, lover of life.

It is my privilege to be asked to speak iefly of Jay today. There are those ere who knew him better than I. new him through the early days of his edical practice in Flagstaff. Knew him rough interminable City Council eetings. Knew him while drifting the aters of Lake Powell casting for striper ass. Knew him from tracking elk at ,000 feet in the Utah mountains. Sat uddled in a tent with him in a frozen inter campsite. Men who were with m when he poured the last of the offee on the dying embers of a mpfire. They should be here, not me. saw Jay Sitterley only through my ealings with him as a medical olleague. That is too narrow an perture to do justice to the man. I pologize for that lack. But in the last vo days I have visited with the closest iends and colleagues and fishing uddies of Jay Sitterley, and their nemories and insights serve to flesh ut the man we remember today.

Jay and his wife, Helen, came to agstaff in 1952 when Jay began his medical practice here. He had completed a residency in Internal Medicine, but the needs of the community dictated his practice. He delivered babies, assisted at surgery, did pediatrics, as well as adult medicine. In addition, in a curious medical contribution, Jay served as pathologist and county coroner in the time before a certified pathologist came to town. Basically, Jay served in the role of family practitioner.

He brought warmth and humor to his practice. He didn't treat livers or kidneys or hearts or lungs. He treated people. And his patients recognized that concerned quality of caring. Many who ostensibly saw him for some minor ailment, took the occasion to seek his counsel about an impending divorce, a wayward child, or some other vexing personal problem. Jay, at first, practiced almost entirely out of his black bag, making housecalls one after another, practicing medicine in the homes of his patients. Sometimes Jay had to be tracked down. As the calls came in, Helen would pass them along. He had places where he would take a break. She might catch him at the Monte Vista having a cup of coffee or taking a nap. Sometimes the police would find him catching a few winks in his car and would send him on his way with another call. Once Jay was going on a housecall and driving at an excessive rate of speed. A police officer pulled him over and, of course, recognized him, and asked him what he was doing. Jay advised him he was making a housecall. The policeman said, "Doc, is it an emergency?" Jay replied, "Well, I won't know till I get there." With that bit of wry chicanery, typical of the man, Jay finessed the speeding ticket.

Jay Sitterley's years of practice spanned the time from the preantibiotic era to the CT scanner. Yet, medical technology did not pass him by. He was a competent physician. But somehow, he seemed a physician of another era, an earlier, simpler time. Jay resisted the pressures for an assembly line type of medicine in which patients were diseases and statistics, not persons and friends. He used technology for the benefit of his patients, but he never confused data with wisdom. Once in those earlier years, an individual was brought to the emergency room with carbon monoxide poisoning. A younger physician on duty in the emergency room saw Jay passing by and called him aside and asked, "Jay, what do you do with carbon monoxide poisoning?" Jay replied, "Laddie," (many of us have been called Laddie by Jay, but it was not a term of condescension). Jay replied, "Laddie, send him out to sit on the wall," (there was a high wall outside the emergency room then), "Send him out to sit on the wall. When he is able to climb down and not fall over, he's all right."

Jay's practice was not dictated by economics and financial remuneration either, but by his allegiance to his patients and his patients' welfare. As Jay got older, he told one of his close medical colleagues, "If you ever see me slipping (less competent), tell me, and I'll stop practicing." His colleague told him he would, but never had to, and Jay retired from active practice in 1980.

Jay served country and community. He served in the Army as a medical officer from 1945 to 1947. He served for years as the Coconino County delegate to the Arizona Medical Association. He was an active delegate and served Coconino County well. He served on numerous committees for the Arizona Medical Association. Jay served his community as a member of the city council from 1960 to 1968, and as Scout leader (he served as camp physician at one of the Boy Scout National Jamborees.)

Jay loved the outdoors. He was an avid hunter, fisherman, boater, and camper. Even those activities were defined in terms of relationships and companionship. From these experiences he drew an endless store of tales. He loved to reminisce. He could remember the jalapeno pepper someone gave him that nearly took the top of his head off. Sometimes his reminisces waxed nostalgic. Each time the buck had a bigger rack, the camp cooking became unimaginably delicious.

Jay, as anyone who knew him was aware, was a devoted family man—husband and father. Jay and Helen's relationship was very special. From shared interests (grandchildren, the making of jewelry, or painting—both Jay and Helen painted landscapes and portraits) their marriage remained a love affair of the heart that lasted thirty-nine years. But the marriage was not special just because it lasted thirty-nine years in an age where the divorce rate approaches fifty percent. Jay and Helen's marriage would have been special if the divorce rate was zero. They were friends, companions, confidants, lovers. Jay, a few months ago, waiting while Helen underwent serious surgery, confided to a friend waiting with him, "Helen is my life." And in the past few days, Helen confided to the same man, "I've lost the best friend I ever had."

Jay Sitterley was a decent human being. He was unflappable, his tempo was deliberate. His pace, whether practicing medicine, hunting, or serving on a hospital committee, was dictated by his own thoroughness. He was a gentleman, and a gentle man. His sense of humor was wry, but not sarcastic. A man of integrity, and a man of compassion. These words, devalued by inappropriate usage in praise of known scoundrels, run the risk of sounding phoney. I asked a friend of Jay's if Jay didn't have some bad traits. He thought a long time, and then said lamely, searching for flaws, "He was feisty." Another said, "Sometimes Jay liked to pontificate." I asked them if he had any enemies. One said he knew of no one who was ever mad at Jay. (I didn't ask Helen). Another said, "If Jay ever called anyone an SOB it was a form of picturesque speech, not animosity." A third said, "I was never with him that I didn't enjoy it, and benefit from it."

Some fourteen years ago on a hunting trip with these same friends, Jay remarked, "When I die, I want to be cremated, and I want you guys to fly over the peaks and scatter my ashes there." Tomorrow these friends will fulfill Jay's wishes.

What do we do with the shadows in our life? With this shadow in our life? I'm reminded of how an artist learns to use shadows. When the artist draws a sphere or a cube, they look like an empty circle or an empty square until he shades them, showing both the light and the shadows. This gives them depth. Shadows belong in the picture. As we said at the outset, trace any shadow far enough and we find it is the dark side of a bright object. Pain is the dark side of the wondrous ability to feel. None of us would prefer a world where we are unable to feel, just to escape pain. Mistakes are the dark side of the glorious freedom to choose. Would we rather live in a world where there is no possibility of making a mistake, but at the same time, no freedom of choice? Bereavement and sorrow are the dark side of human fellowship. They are the shadows cast by the privilege of being able to belong to one another. They are part of the same picture. There would be no grief at parting if we never belonged to each other, but who would wish to live in a world where people could not belong to one another, merely to avoid grief?

Jay Sitterley, as an artist, sort of a masculine Grandma Moses, knew what to do with the shadows in his paintings. They gave them depth. Jay Sitterley, the man, knew what to do with the shadows in his life. He took them all in stride. As we must. And when we trace his shadow far enough today to reach the sunlit man, I see Jay Sitterley, jauntily cruising the Turquoise Ball in his derby.

Larry Hunter, M.D.

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

GOVERNING COUNCIL — HOSPITAL MEDICAL STAFF SECTION

The Governing Council of the Hospital Medical Staff Section met on Saturday, February 4, 1984.

Dr. R. Robertson Kenner, Superintendent and Chief of Staff of the Arizona State Hospital, responded to the council's concerns regarding the rules and regulations which had been written to implement the Mental Act established in 1974 by, firstly, describing the circumstances surrounding the development of those rules and regs and, secondly, responding to specific questions by members on portions of the rules and regs. Questions basically were as to what various terms meant, to whom each actually applied, and restrictions regarding informed consent, involuntary/voluntary commitment, admission, and patients' rights. Dr. Kenner did advise the members that, although these rules and regs had gone into effect, they could, following appropriate procedures, be amended. It was agreed that HMSS representatives and Chiefs of Staff would be requested to direct their concerns regarding the rules and regulations for the Mental Health Act to Dr. Kenner and that, upon receipt of same, he would transmit them to legal counsel for review and, if deemed by counsel and the Department of Health Services that amendments were indicated, the same would be drafted, notice given of same and public hearings held.

The results of the recent survey which was made regarding participatio by HMSS representatives in Medical Staff, General Staff and Boards of Trustees meetings was reviewed and it was determined that the minutes of th meeting be accompanied by a memorandum to the representatives and Chiefs of Staff, with a copy to the Medical Staff Secretary at each hospita encouraging them again to seek a permanent time slot at each of the meetings to discuss the major items of interest considered by the Governing Council or the entire section.

Dr. Shallenberger presented the council with an oral and written repor on the items of business considered during the December 1983 meeting of the AMA Hospital Medical Staff Section.

As directed by the Board of Directors, the Governing Council reviewed the recommendation of the Health Manpower Committee that ArMA support the proposal of the Statewide Council on Nursing that join nurse/physician advisory councils be formed within the organizational structure of Arizona hospitals and, additionally, heard from Dr. Linkner, both in his capacity as Chairman of the Health Manpower Committee and as a member of the Council on Nursing Manpower, regarding the basis for suc a proposal—a perceived insecure feeling where nurses deal with physicians in patient care, the ethical issues which need clarification, and an improvement and strengthening of communications. By way of assistance for the council in its deliberation on the matter, Dr. Linkner presented the following excerpt from the June 1983 proceedings of the House of Delegates of the American Medical Association:

"B. INTERPROFESSIONAL RELATIONS WITH NURSES

(Reference Committee on Amendments to Constitution and Bylaws, page 313)

HOUSE ACTION: ADOPTED

Physicians and nurses must work cooperatively together to provide optimum patient care. The Judicial Council has adopted the following opinion on Interprofessional Relations Between Physicians and Nurses, and submits this opinion to the House of Delegates.

INTERPROFESSIONAL RELATIONS WITH NURSES

The primary bond between medical practice and nursing is mutual ethical concern for patients. One of the duties in providing reasonable care is fulfilled by a nurse who carries out the orders of the attending physician. Where orders appear to the nurse to be in *ror or contrary to customary medical d nursing practice, the physician has ethical obligation to explain those ders to the nurse involved. Whenever nurse recognizes or suspects error or screpancy in a physician's orders, the rse has an obligation to call this to e attention of the physician. The hical physician should neither expect r insist that nurses follow orders ntrary to standards of good medical d nursing practice. In emergencies hen prompt action is necessary and e physician is not immediately ailable, in the performance of asonable care a nurse may be stified in acting contrary to the ysician's standing orders for the fety of the patient. Such occurrences ould not be considered to be a eakdown in professional relations." It as moved and carried that the HMSS overning Council recommend to the oard of Directors that the Arizona edical Association encourage hospital edical staffs to include line or floor rses (nonadministrative) on mmittees of the medical staffs which eal with patient care for the sole urpose of improving or enhancing the uality of that care.*

Dr. Ward briefly updated the council embers on activities of the coalition nd the Arizona Hospital Association, stributed a copy of the latest ArHA ad ontained in the January 28th issue of e Wall Street Journal, reported on the eeting held earlier February 4th with r. William Hogan, Chairman of the oard at St. Luke's Behavioral Health enter and his attempts to meet with nd get some consensus from the rious hospitals relative to the issues in spute, and reaffirmed the two-part osition taken by ArMA's Board of irectors on January 21st which had een distributed to the membership via ledical Memos.

The council members were informed at it appeared that the liaison group onsisting of the council and certain embers of the Arizona Hospital ssociation was in its final formation ages and Dr. Ward asked for greement on the day for which a eeting should be scheduled. It was greed that the meeting day should be aturday, with the first meeting held at rMA, with Dr. Ward chairing same. It as also the consensus that on matters iscussed, no actual vote should be aken but statements as to what ccurred should be published, stating at agreements were reached on arious items or interesting discussion n certain matters took place. One of he items which all agreed should be iscussed during the first meeting is "all ayor DRGs," which might allow for ccumulation of data upon which firm etermination might be made as to whether the Association might, by way of resolution, take a position on the subject.

The committee received and reviewed 1/20/84 correspondence from Clyde W. Kurtz, M.D., with attachments, relating to advertising techniques of Baptist Hospital and Health Systems.

The correspondence of Andrew J. Slaski, M.D. relating to certain conflicts which had recently arisen at the Sierra Vista Community Hospital and requesting the council's assistance were reviewed and discussed at great length. It was the consensus of the members that this was the type of problem which should be resolved through the medical staff at the hospital, it being agreed that council action in such matters must be limited to requests from entire medical staffs for intervention of some nature. It was agreed that Dr. Ward would, by contacting Dr. John Sawyer, Chief of Staff at the Sierra Vista Community Hospital, request the medical staff's assistance in helping Dr. Slaski and administration come to an agreement and understanding relative to patient safety and quality health care; and, additionally, in correspondence with Dr. Slaski, suggest possible solutions which might be considered by the medical staff to insure quality health care and minimize exposure for malpractice actions.

The committee received a copy of Resolution No. 6-84 which would be submitted by the Board of Directors to the April meeting of the House of Delegates relating to "Gatekeeper" Influence on Cost and Quality of Health Care and the members were requested to give careful thought to any subjects on which they felt the Hospital Medical Staff Section should prepare and submit resolutions.

The annual meeting of the Hospital Medical Staff Section scheduled for 9:00 a.m. on Thursday, April 26, 1984, at the Scottsdale Conference Center and Resort Hotel was discussed and a tentative agenda developed. It was agreed that the next meeting of the Governing Council would be held on Thursday, April 26, 1984, at 8:00 a.m., just prior to the general meeting of the entire section.

LEGISLATIVE COMMITTEE

The Legislative Committee of the Arizona Medical Association met Saturday, February 4, 1984.

Legislative Reception

Dr. Kurtz reminded the committee of the February 21st date for the legislative reception. He urged all members to attend and to send in their RSVP cards immediately.

Consideration of Printed Bills

H. B. 2113- uniform determination of death act

It was moved and carried to offer general support for H.B. 2113.

H. B. 2121- health care services organizations; deposits

It was moved and carried to take no action on H. B. 2121.

H. B. 2123- cigarette tax for cancer

It was moved and carried to offer active support for H.B. 2123.

H. B. 2127- health boards; notification; disciplinary actions

It was moved and carried to offer general support for H. B. 2127.

H. B. 2153- hospital admissions; precertification by payors

It was moved and carried to offer nonsupport for H. B. 2153.

H. B. 2164- prisoners; commitment; mental health treatment

It was moved and carried to actively study H. B. 2164.

H. B. 2180- county medical benefit standards; repeal

It was moved and carried to offer active nonsupport for H. B. 2180.

H. B. 2187- impounded animals; experimentation prohibited

It was moved and carried to offer active support for H. B. 2187.

H. C. R. 2005- referendum; drinking age; twenty-one

It was moved and carried to offer active support to H. C. R. 2005.

S. B. 1020- candidates; PAC contributions' limitation

It was moved and carried to take no action on S. B. 1020.

S. B. 1050- driving while intoxicated; alternative sentence

It was moved and carried to actively study S. B. 1050.

S. B. 1077- board of physician therapy examiners

It was moved and carried to offer active nonsupport for S. B. 1077.

S. B. 1081- Arizona health insurance association

It was moved and carried to actively study S. B. 1081.

S. B. 1082- life care facilities

It was moved and carried to actively study S. B. 1082.

S. B. 1097- syphilis test repeal

It was moved and carried to offer active support for S. B. 1097.

S. B. 1100- uniform contribution among tortfeasors

It was moved and carried to offer general support for S. B. 1100.

S.B. 1114- special education; homebound or hospitalized

It was moved and carried to offer general support for S. B. 1114.

S. B. 1149- Good Samaritan stature; team physician

It was moved and carried to offer active support for S. B. 1149.

H. B. 2211- respiratory care; regulation

It was moved and carried to offer nonsupport for H. B. 2211.

H. B. 2224- insanity defense; indefinite commitment

It was moved and carried to actively study H. B. 2224.

H. B. 2236- uniform contribution among tortfeasors

It was moved and carried to offer general support for H. B. 2236.

H. B. 2241- family planning services; appropriation

It was moved and carried to offer active support for H. B. 2241.

H. B. 2253- indigent health care; AHCCCS modifications

It was moved and carried to actively study H. B. 2253.

H. B. 2255- no smoking in grocery stores

It was moved and carried to offer active support for H. B. 2255.

H. B. 2258- psychological exam prohibition; sexual offenses

It was moved and carried to actively study H. B. 2258.

H. B. 2266- wrongful life action; damages limited

It was moved and carried to offer active support for H. B. 2266.

H. B. 2269- medical practices; peer review; immunity

It was moved and carried to actively study H. B. 2269.

H. B. 2275- hospitals; review authority; open staffing

It was moved and carried to offer active nonsupport for H. B. 2275.

H. B. 2278- birth defects study; supplemental appropriation

It was moved and carried to offer general support for H. B. 2278.

H. B. 2287- medical information; confidentiality; privilege; exceptions

It was moved and carried to table H. B. 2287.

H. B. 2303- repeal limited licenses for doctors

It was moved and carried to offer active support for H. B. 2303.

H. B. 2339- doctors; licensure; validity

This bill has already been signed by the Governor.

It was moved and carried to support further legislation which would benefit the balance of the limited licensed doctors.

S. B. 1155- natural death act

It was moved and carried to actively study S. B. 1155.

S. B. 1203- physical therapy; referring practitioners

It was moved and carried to offer active nonsupport for S. B. 1203.

S. B. 1205- exemplary damages; payment to state

It was moved and carried to offer active support for S. B. 1205.

S. B. 1211- personal injury judgments; periodic payments

It was moved and carried to offer active support for S. B. 1211.

S. B. 1216- shared living centers; elderly, disabled

It was moved and carried to actively study S. B. 1216.

S. B. 1220- sale of body, organs prohibited

It was moved and carried to actively study S. B. 1220.

S. B. 1223- naturopaths; exemptions; examinations

It was moved and carried to take no action on S. B. 1223.

S. B. 1234- health insurance; "first-dollar coverage" prohibited

It was moved and carried to take no action on S. B. 1234.

S. B. 1235- employees' catastrophic medical expenses coverage

It was moved and carried to refer S. B. 1235 to the next legislative meeting.

S. B. 1243- AHCCCS; care quality monitoring standard

It was moved and carried to offer active nonsupport for S. B. 1243.

S. B. 1250- doctors; licensure; validity

Same as H. B. 2339 which was signed by Governor.

Next meeting will be Saturday, February 25, 1984 at 10:00 a.m.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc. met on Friday, February 17, 1984.

In the absence of Mr. Don Mathis, Director of the Department of Health Services, the committee received and discussed HB 2547 which had been introduced into the legislature on February 16th which would, if passed, grant greater authority and power to the Director of DHS with regard to the administration of the AHCCCS program.

The committee reviewed and discussed the request of Samuel I. Rothman, M.D. that membership in the Fifty-Year Club be granted to him, together with information to the date of the granting of his doctor of medicine degree, and was apprised that the records of the Association and the Board of Medical Examiners show Dr. Rothman received his degree in 1935 and that, additionally, Dr. Rothman currently maintained "associate" status membership. It was moved and carried that correspondence be directed to Dr. Samuel I. Rothman advising that both the records of the Association and the Board of Medical Examiners reflect that his medical degree was granted in 1935 and that by virtue of the existing bylaws, his associate status precluded him from being granted Fifty-Year Club membership unless the House of Delegates during its meeting in 1984 amended the Bylaws to include not just "active," but all categories of membe in which event he would be eligible such elevation in 1985.

The proposed schedule for the 198 Rural Health Conference, together w a request for financial support were received and reviewed by the committee. Following a lengthy discussion, it was the consensus of th members that, due to the withdrawal financial support of such conference the Yavapai County Medical Society, one of the Association's component societies, the Association could not extend financial support for the 1984 Rural Health Conference and that suc decision be communicated to the appropriate parties.

The Committee received correspondence dated 2/8/84 from th Governor advising of the appointmen of David Ben-Asher, M.D. and the appointment of Gilbert L. Sechrist, M.D. to the State Board of Medical Examiners.

The committee received a request from Dr. Gregory W. Prian for the Association's assistance in a disagreement he is having with the Mutual Insurance Company of Arizon (MICA), together with other background on Dr. Prian's apparent problems and determined to advise D Prian that the members sympathize with the situation with which he is confronted and would offer support and assistance in attempting to resolv his medical problems but the Association could not, in fact, enter into or intercede in any fashion in a dispute based upon a contractual relationship.

A brief update was given by Kevin Walker on matters of interest currentl before the legislature.

Correspondence and documents relating to suspension of license of William E. Amos, M.D. were received by the committee.

The first issue of *Medi-Facts*, an Association publication for physicians' offices, was reviewed by the committe and it was suggested that future issues should, if possible, carry the Associati logo.

Dr. Robles reported on his recent visit with the Graham County Medical Society.

LEGISLATIVE COMMITTEE

The Legislative Committee of th Arizona Medical Association me Saturday, February 25, 1984.

Consideration of Printed Bills

H. B. 2293- reporting child abuse

It was moved and carried to offer nonsupport for H. B. 2293.

H. B. 2307- driving while intoxicate evidence

t was moved and carried to actively dy H. B. 2307.

B. 2309- abortion; insurance coverage; itations; restrictions

t was moved and carried to actively dy H. B. 2309.

B. 2311- health planning; coordinating uncil

It was moved and carried to actively dy H. B. 2311.

B. 2331- appropriation for AHCCCS dits

It was moved and carried to offer tive support to H. B. 2331.

B. 2351- DES; day care institutions; gulations

It was moved and carried to actively udy H. B. 2351.

B. 2381- laboratories; rebate; fee split ohibited

It was moved and carried to actively udy H. B. 2381.

B. 2392- one-year limited medical enses

It was moved and carried to offer eneral support to H. B. 2392.

B. 2405- behavioral health professional

It was moved and carried to offer tive nonsupport to H. B. 2405.

B. 2409-AHCCCS eligibility; over age

It was moved and carried to actively udy H. B. 2409.

B. 2422- osteopaths; medical doctors, egulation, combination

It was moved and carried to actively udy H. B. 2422.

B. 2433- incapacitated adults; abuse; andatory reporting

It was moved and carried to offer eneral support for H. B. 2433.

B. 2450- civil immunity; licensed health rofessionals

It was moved and carried to actively udy H. B. 2450.

B. 1227- driving while intoxicated; tensive supervision

It was moved and carried to offer eneral support for S. B. 1227.

B. 1235- employees' catastrophic edical expenses coverage

It was moved and carried to offer eneral support for S. B. 1235.

B. 1236- osteopathic physicians

It was moved and carried to offer eneral support for S. B. 1236.

B. 1237- clinical pharmacist ractitioners

It was moved and carried to actively tudy S. B. 1237 (as amended).

B. 1260- co-payment obligation; waiver rohibited

It was moved and carried to offer onsupport for S. B. 1260.

B. 1270- board of medical examiners

It was moved and carried to to actively study S. B. 1270.

B. 1272- BOMEX; schools of medicine; approval

It was moved and carried to actively study S. B. 1272.

S. B. 1273- preferred provider organizations

It was moved and carried to actively study S. B. 1273.

S. B. 1283- Arizona state hospital advisory board

It was moved and carried to actively study S. B. 1283.

S. B. 1284- public employees; health insurance

It was moved and carried to actively study S. B. 1284.

S. B. 1285- AHCCCS; asset level for eligibility

It was moved and carried to offer general support for S. B. 1285.

S. B. 1286- medicare program committee; consultants; appropriation

It was moved and carried to actively study S. B. 1286.

S. B. 1303- child protection act; abortion regulation

It was moved and carried to actively study S. B. 1303.

S. B. 1316- insurance; nursing; benefit denial prohibited

It was moved and carried to to actively study S. B. 1316.

S. B. 1356- impounded animals; prohibit experimentation

It was moved and carried to offer active nonsupport for S. B. 1356.

S. B. 1358- fire fighters; occupational diseases; cancer

It was moved and carried to offer active nonsupport for S. B. 1358.

S. B. 1366- dispensing practitioner registration

It was moved and carried to offer nonsupport to S. B. 1366.

S. B. 1387- appropriation; DHS; community mental health

It was moved and carried to actively study S. B. 1387.

S. B. 1392- regents; realty leases; health institutions

It was moved and carried to actively study S. B. 1392.

S. B. 1410- AHCCCS; committee study on transition

It was moved and carried to take no action on S. B. 1410.

S. B. 1412- firefighters; occupational disease

It was moved and carried to offer active nonsupport for S. B. 1412.

S. B. 1346- cigarette tax to cancer

It was moved and carried to offer active support for S. B. 1346.

S. B. 1355- speech pathology services under AHCCCS

It was moved and carried to offer nonsupport for S. B. 1355.

S. B. 1377- AHCCCS eligibility over age 62

It was moved and carried to actively study S. B. 1377.

S. B. 1393- health facilities authority; various changes

It was moved and carried to actively study S. B. 1393.

S. B. 1411- AHCCCS; system modifications

It was moved and carried to actively study S. B. 1411.

H. B. 2275- hospitals; review authority; open staffing

It was moved and carried. Received for information. Position continues to be active nonsupport. Subcommittee will be reconvened.

H. B. 2287- medical information; confidentiality; privilege; exceptions

It was moved and carried to to activiely study H. B. 2287.

H. B. 2319- board of dental examiners

It was moved and carried to offer active nonsupport for H. B. 2319.

H. B. 2374- workmen's compensation

It was moved and carried to actively study H. B. 2374.

H. B. 2430- mental disorder includes mental retardation

It was moved and carried to offer active nonsupport for H. B. 2430.

H. B. 2443- hospital industrial development projects

It was moved and carried to actively study H. B. 2443.

H. B. 2444 naturopathic physicians; definitions

It was moved and carried to offer active nonsupport for H. B. 2444.

H. B. 2448- health promotion and improvement plans

It was moved and carried to take no action on H. B. 2448.

H. B. 2449- physician's assistants; regulation

It was moved and carried to offer general support for H. B. 2449.

H. B. 2457- infants; nutritional or medical deprivation

It was moved and carried to offer general support for H. B. 2457 with recommendations included.

H. B. 2469- consumer protection board; professions; occupations

It was moved and carried to offer active nonsupport for H. B. 2469.

H. B. 2531- CON extension- three-year bed moratorium

It was moved and carried to actively study H. B. 2531.

H. B. 2546- AHCCCS: regulate member assignment requirements

It was moved and carried to actively study H. B. 2546.

H. B. 2547-AHCCCS; system administration; contracts

It was moved and carried to actively study H. B. 2547.

S. B. 1417- Disease Control Commission

It was moved and carried to actively study S. B. 1417

S. B. 1418- AHCCCS contracts

It was moved and carried to actively study S. B. 1418.

H. B. 2211- respiratory care; regulation

It was moved and carried to offer

nonsupport for H. B. 2211.

H. B. 2269- medical practices; peer review; immunity

It was moved and carried to offer active support for H. B. 2269.

FINANCE COMMITTEE

The Finance Committee of the Arizona Medical Association, Inc., met at the Pima County Medical Society, Tucson, Arizona, on Saturday, March 10, 1984.

The Board of Directors' letter of 4/1/83 to the committee advising the committee that the Board had approved the 1984 budget as prepared by the committee was received for information.

Dr. Lorenzen's resignation from the committee was accepted with regrets.

Funding for the Ad Hoc Salt Reduction Committee: The committee reviewed the Board of Directors' letter of 1/31/84 requesting the committee find seed money to provide staff support for this activity.

Dr. Kossuth reviewed the proposed activities of the Ad Hoc Committee for the benefit of the Finance Committee. After this discussion, the committee took the following action: It was moved and carried to provide the requested budget.

The committee reviewed the Executive Committee's letter of 1/26/84 and Resolution No. 7-84, "Building Fund Assessment," in depth.

Mr. Robinson noted that the 1985 proposed budget was predicted upon doing away with the fund. After extensive discussion, the following action was taken: It was moved and carried to support Resolution No. 7-84 with the understanding that those members who are currently paying off the assessment would be forgiven any balance outstanding at the time of adoption of the resolution.

Christmas Gift Program: The Executive Committee's letter of 11/8/83 on the subject matter was reviewed and the following action taken: It was moved and carried to continue the Christmas Gift Program through the year 1984 but discontinue it in subsequent years.

The committee considered the 1985 budget, using the zero based budgeting technique of analyzing each and every line item of income and expense. Following this extensive review: It was moved and carried to submit to the Board of Directors the 1985 Proposed Budget.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

APRIL

Advances in Pulmonary Medicine & Appropriate Handling of Neurological Emergencies
April 14-21 & April 21-28 (2 part conferences). Lake Powell, Arizona. Sponsors: American Institute of Primary Care Medicine & the University of Arizona, College of Medicine. Contact: EPIC Expeditions, P.O. Box 209, Sun Valley, Idaho 83353. Approved for 24 hours of Category 1 credit.

Neuro-Ophthalmology at the Grand Canyon
April 25-28. El Tovar Hotel, Grand Canyon National Park. Sponsor: U. of A. College o Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 14.5 hours of Catego 1 credit.

Current Perspectives Seminar
The Well Adult and Aging
April 26. Scottsdale. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours Category 1 credit.

Clinical Seminar Series
Diagnosis and Therapy of Cardiovascular Disorders
April 28. Phoenix Hilton. Sponsor University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, Arizona Health Sciences Cente Tucson, AZ 85724. Approved for 7 hours o Category 1 credit.

MAY

Abuse and Neglect of the Elderly: A Physician's Conference on the Detection and Management of Elder Abuse
May 2, 1984, 1:00-5:00 pm. Good Samaritan Hospital, Phoenix, AZ. Contact: Georgia Hall, Ph.D. 239-5906. Approved for 4 hours of Category 1 credit.

7th Annual Arizona Patient/Health Education Conference & Arizona Public Health Assn. Spring meeting
May 3-4, Carefree Inn Resort, Carefree, Arizona. Sponsor: Arizona Dept. of Health Services & Arizona Public Health Association. Contact: Az Dept. of Health Services, Office of Health Education at (602) 255-1008. Approved for hour per hou Category 1 credit.

Ethical Issues in Health Care
May 3—5. Sponsored by the Arizona Humanities Council. Contact: Arizona Humanities Council, 100 West Washington, Suite 1290, Phoenix, AZ 85003. (602) 257-0335. Approved for 13 hours Category 1 credit, nurses - 15.6 contact hours.

Continued on page 273

THE NEVADA STATE MEDICAL ASSOCIATION

presents its

1984 SCIENTIFIC SESSION

FRIDAY, MAY 4, 1984

Credits: AMA Category I, AAFP Credits, CE Units for Nurses
stration: 8:00 am - 9:00 am (continental breakfast)
ram Chairman: Stephen A. Kollins, M.D.

0 am — Introductions

5 am — "Percutaneous Nephrolithotomy: New Approaches to Renal Stone Disease"
Robert Kahn, M.D., *Assistant Professor of Urology at the University of California Medical Center, San Francisco, California*

0 am — "Light Transmission Mammography and Evaluation of the Breast"
Ernest Carlsen, Ph.D., M.D., *Department of Radiology at Jerry Pettis Memorial Hospital in Loma Linda, California*

5 am — Refreshment Break

0 am — "Low Level Radioactive Waste Disposal: Prospectives for Nevada Physicians"
Schuyler Hilts, M.D., *President-Elect of the American College of Nuclear Physicians*

5 am — Panel—Questions & Answers

5 pm — Luncheon and Presentation: "Post Tefra Planning Techniques for Turning Income Tax Dollars into Family Wealth"
Mr. Gary Sheets, Financial Advisor for Coordinated Financial Services, Inc.

5 pm — "Magnetic Resonance Imaging: New Horizons in Diagnosis"
William Bradley, M.D., Ph.D., *Director of the NMR Imaging Laboratory at the Huntington Medical Research Institute in Pasadena, California*

5 pm — "Osteoporosis: The Hidden Threat for Women"
Ian V. Jones, M.D., *Head of the Division of Obstetrics and Gynecology at the Scripps Clinic and Research Foundation, La Jolla, California*

0 pm — Panel—Questions & Answers

0 pm — Adjournment

AS VEGAS

Hotel Headquarters:
Desert Inn Country Club and Spa

REGISTRATION

ne ______________________________
lress ______________________________
/State/Zip ______________________________
ne ______________________________

SCIENTIFIC SESSION FEES
Circle one (includes luncheon):

NSMA Members	$ 80
Nonmember physicians	$110
Nurses	$ 50
Retired, Interns, Students	$ 25

urn this form along with appropriate fees to the NEVADA STATE MEDICAL ASSOCIATION, 3660 Baker Lane, Reno, NV 89509. Or ster by phone, (702) 825-6788, Kathy Boyce, Convention Manager. Housing information will be forwarded upon receipt of registration n.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

Neuro-Opthalmology at Grand Canyon
April 25-28, El Tovar Hotel, Grand Canyon National Park. Contact: Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 14.5 hours of Category 1 credit.

Diagnosis and Therapy of Cardiovasuclar Disorders
April 28, Phoenix Hilton, Phoenix. Sponsor: University of Arizona College of Medicine. Contact: The Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ, 85724. Approved for 7 hours of Category 1 credit.

Restorative Medicine
May 19, Arizona Health Sciences Center, University of Arizona, Tucson, Arizona. Contact: The Office of Continuing Medical Education, Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008.
Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept, & Nov.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

Abuse and Neglect of the Elderly: A Conference for the Physician
May 2, 1984
Good Samaritan Medical Center — Medical Education

12:30-1:00 pm	Registration
1:00	Welcome — William James Howard, M.D.
1:15	Introduction of the Program — John R. Green, M.D. Introduction of Speaker — Georgia G. Hall, Ph.D.
1:30-2:45	"The Physician's Role in the Detection and Management of Elder Abuse" — Kenneth L. Minaker, M.D.
2:45-3:00	BREAK
3:00-4:00	Panel Discussion — Mary Carpenter, A.S.C.W., Stephen Murphey, M.D., Eloy Ysasi
4:00-4:20	"A National Perspective of Elder Abuse" J. Grant Woods
4:20-4:40	"Current and Pending State Legislation" Ms. Debbie McCune
4:40-5:00	"Present and Future Approaches to the Problem of Elder Abuse" — Georgia G. Hall, Ph.D.

Registration: $20 — CME: 4 Category 1

Sponsors:
Arizona Medical Association
de Novo, Inc.
Good Samaritan Medical Center
SamCor — Community Health Programs

For more information, call Good Samaritan Medical Center
Department of Geriatrics/Gerontology — (602) 239-5906

11th ANNUAL ARIZONA RURAL HEALTH CONFERENCE
"Who Cares? The Rural Health Care Professional"
August 3 and 4, 1984
Northern Arizona University
Flagstaff, Arizona
For more information, contact:
Irene Sassoon, Coordinator
Rural Health Office, 3131 E. 2nd St.,
Tucson, AZ 85716 (602) 626-4469

SPORTS MEDICINE TODAY

May 17 & 18, 1984, Vista International Hotel, New York, New York. Sponsored by: Division of Pediatric Cardiology, Schneider Children's Hospital, Long Island, Jewish—Hillside Medical Center and American Heart Association, Nassau Chapter. Training; exercise; methods; prevention and treatment of athletic injuries; risk and benefits of exercis-testing; effects of exercise and nutrition on body composition and more. 16 Category 1 credits. Information: Ann Boehme, Continuing Education, Long Island Jewish—Hillside Medical Center, New Hyde Park, NY 11042, (212) 470-2114.

DESERT SAMARITAN HOSPITAL

400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved or Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Problem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..

Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.

Continued on next page

Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.

Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7 :30 a.m.
Anesthesiology Journal Club
4th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
4th Thursday, 8:00 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12 :30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

1984 CME CRUISE/CONFERENCES ON LEGAL—MEDICAL ISSUES

Caribbean, Mexican, Hawaiian, Alaskan, Mediterranean. 7—14 days in winter, spring & summer. Approved for 18—24 CME Category 1 credits. (AMA/PRA). Distinguished professors. **Fly roundtrip free on Caribbean, Mexican, & Alaskan cruises.** Excellent group fares on finest ships. Registration limited. Pre-scheduled in compliance with present IRS requirements.

Information:
International Conferences
189 Lodge Avenue, Huntington Station, N.Y. 11746 (516) 549-0869.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved fc
Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251.
Contact: Tom Disney, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.
Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am - 8:30 am, Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.

sychiatry Conference
d Thursday, 7:00 a.m., Auditorium.
ombined Medical General Practice onference
st Friday, 12:15 p.m., Auditorium.
oxicology Grand Rounds
nd Friday, 7:30 a.m., Auditorium.
phthalmology Conference
st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

50 West Thomas Road, Phoenix, AZ 5013. Contact: Joseph C. White, M.D.
B/GYN Section Conference
rd & 4th Mondays, 12:30-1:30 p.m., st Floor Conf. Rm.
enetics Conference
eekly, Monday, 12:30 p.m., Pediatric epartment.
ediatric Rounds
eekly, Monday, Wed. & Friday, 10:30 a.m., ediatric Department.
ediatric Grand Rounds
th Tuesday, 7:30-8:30 a.m., Contact: . Kipp Charlton, M.D.
CG Conference
Veekly, Tuesday, 12:30 p.m., Pediatric epartment.
ledical Grand Rounds
Veekly, Wednesday, 8:00 a.m., 1st Floor onf. Room.
isiting Professor Formal Presentation
Veekly, Thursday, 8:00 a.m., PIMC.
isiting Professor Informal Presentation
Veekly, Thursday, 9:30 a.m., 1st Floor onf. Room.
isiting Professor Formal Presentation
Veekly, Thursday, 12:30 p.m., PIMC.
lephrology Conference
Veekly, Fridays, 12:30 p.m., Pediatric epartment.

ST. JOSEPH'S HOSPITAL TUCSON

50 N. Wilmot Road, Tucson, AZ 85711 ontact: Yvonne Clingerman, Medical Staff ffice. Approved for Category 1 credit.
urrent Concepts in Medicine
Veekly, Tuesday, 12 Noon, Auditorium
urgery Department Conference
th Monday, 12 Noon, Auditorium.
lematology/Oncology Conference
ast Wednesday, 12 Noon, Contact: lick Mansour, M.D.
phthalmology Case
nd Tuesday, 7:30 a.m.
phthalmology Society
th Tuesday, 6:00 p.m., Auditorium ontact: Leonard Joffe, M.D.

Attend the

ARIZONA MEDICAL ASSOCIATION

93rd Annual Meeting

April 26—28, 1984

Scottsdale Conference Center
7700 East McCormick Parkway
Scottsdale, Arizona

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesdays, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Urology Conferences
Weekly Tuesdays, Room 2413 - Uropathology
Weekly Tuesdays, Room D-335 - Consultation
Weekly Fridays, Room 3134 - Uroradiology
These activities are a part of the CME program at the Veteran's Administration Medical Center
Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8:00-9:00 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursdays, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2no, 3rd. & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact: Dr. Zeller.

Continued on next page

Urology Conference
Weekly Friday. 12:00-1:00 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER
(U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.
Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.
Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.
Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.
Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.
Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER
(U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.
Radiology Conference
1st Tuesday, 7:00 a.m.
Operation Outreach
2nd Tuesday, 6:30 p.m.
Pathology Conference
4th Tuesday, 7:00 a.m.
Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.
Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.
Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.
Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.
Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.
Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m., Contact: Dr. Ewy.
Cardiology Non-Invasive Conference
Weekly, Friday, 3:30 p.m., Contact: Dr. Ewy.
Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn, Contact: Karen Garcia.
Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.
Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.
Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.
Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard
Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact: Dr. Johnson.
Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.
GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.
GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.
Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.
Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.
Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.
Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.
Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.
Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.
Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m., Contact: Dr. Stern.
Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.
Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.
OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact: Dr. C. D. Christian.
Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.
Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.
Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.
Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.
Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact Dr. C. D. Christian.
Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.
Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.
Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHS Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.
Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.
Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.
Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.
Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.
Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.
Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.
Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.
Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.
Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.
Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m., Contact: Dr. Nagle.
Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

esident's Conference
eekly, Wednesday, 5:00-6:00 p.m., Diag.
diology Conf. Rm.
rgical Grand Rounds
turdays, 9:00 a.m., Rm. 5403, AHSC,
ontact: Dr. Wangensteen.
rgical Morbidity & Mortality Conference
eekly, Wednesday, 8:00 a.m., Contact:
. Wangensteen.
auma Conference
hursday, 4:00-5:00 p.m. AHSC, Rm. 5505.
oxicology Conference
eekly, Tuesday, 8:00 a.m., Contact:
. Keith Likes.
icson Ultrasonography Group
eekly, Wednesday, 4:30 p.m., AHSC,
ontact: Dr. I. Freundlich.
eneral Urology Conference
eekly, Tuesday & Thursday, 12:00 noon,
HSC & VA Hospital Contact: Dr. G.W.
rach.
ascular Surgery Conference
eekly, Tuesday, 4:00-6:00 p.m., AHSC,
ontact: Dr. J. Goldstone.

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Institution
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City
State Zip

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U.S.A.

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Dept. P.R.
London W1N 7RA
England

A WORD TO THE WHYS

WHY AMA? Commitment to maintaining high quality at all levels of medical education is one of the AMA's proudest traditions. The AMA creates policy for medical education, participates in accreditation activities, and supplies the public with information on medical education issues. Proven dedication to high standards in medical education: it's one more good reason why you should be a part of the AMA.

WHY AMA? Now, for the first time there's a forum for hospital medical staffs to meet nationally to discuss common problems and changes in physician-hospital relationships. The Hospital Medical Staff Section was recently created by the AMA to provide leadership in ensuring quality patient care during this period of massive hospital restructuring. It's one more good reason why you should be a part of the AMA.

To Join, Contact your county or state medical society or write: Division of Membership, AMA, 535 North Dearborn Street, Chicago, Illinois 60610 or call collect, (312) 751-6196.

AMA
AMERICAN MEDICAL ASSOCIATION

sponsored group insurance

As a member of the Arizona Medical Association, you can take advantage of life, health and accident insurance selected to meet your needs, with the savings available through group insurance.

The Arizona Medical Association has provided its members with sponsored insurance programs for over 25 years. The programs currently available are: disability, term life (for members and their spouses), defendant's reimbursement, accidental death and overhead expense.

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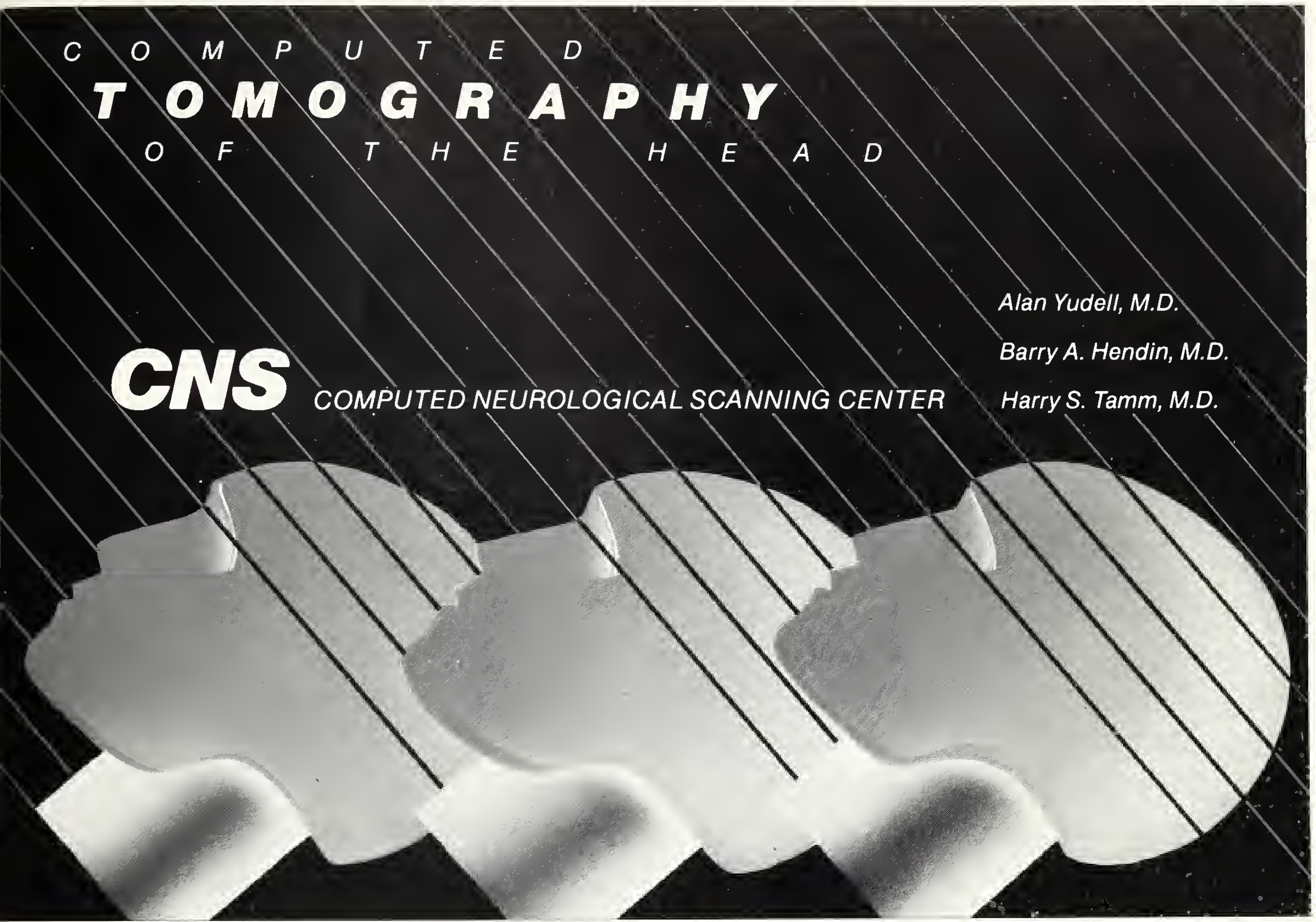

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Alan Yudell, M.D.
Barry A. Hendin, M.D.
Harry S. Tamm, M.D.

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An added complication...
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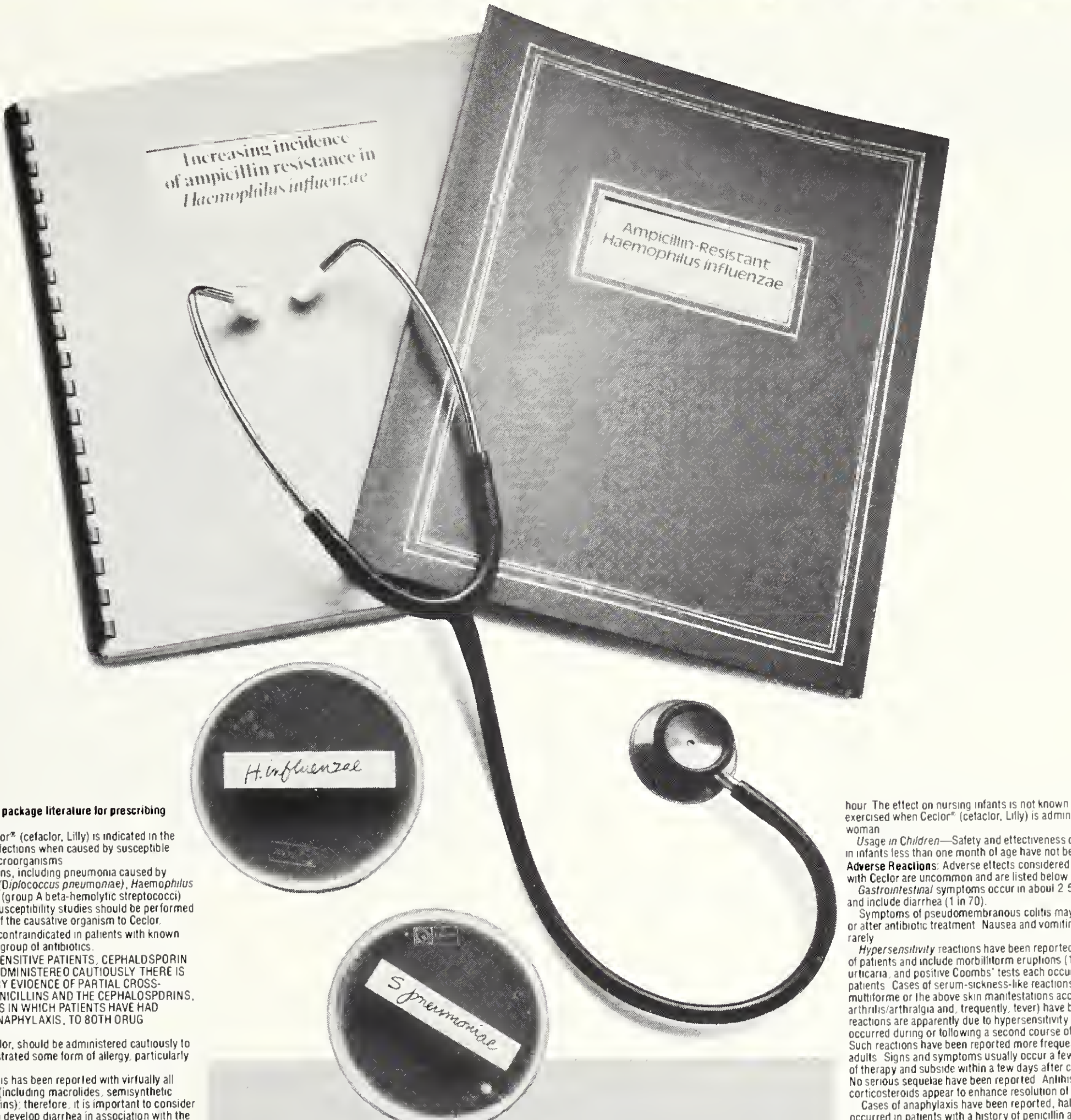

Brief Summary. Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile* Other causes of colitis should be ruled out

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g , pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0 20, 0 21, and 0.16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour The effect on nursing infants is not known Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2 5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients)

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.$^{1-6}$

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

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*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S pneumoniae* or *H influenzae* *

Note Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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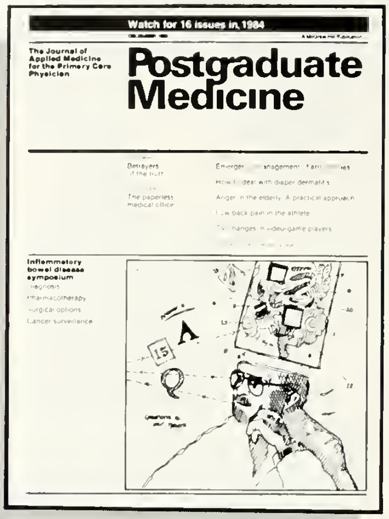

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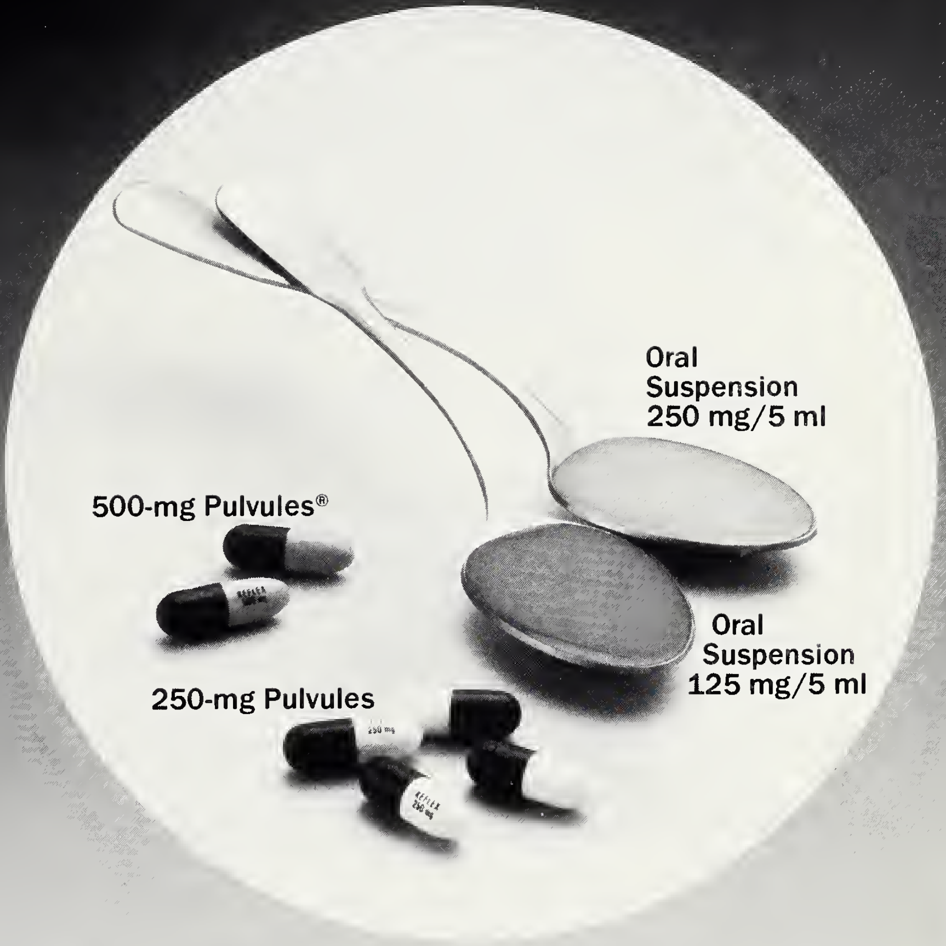

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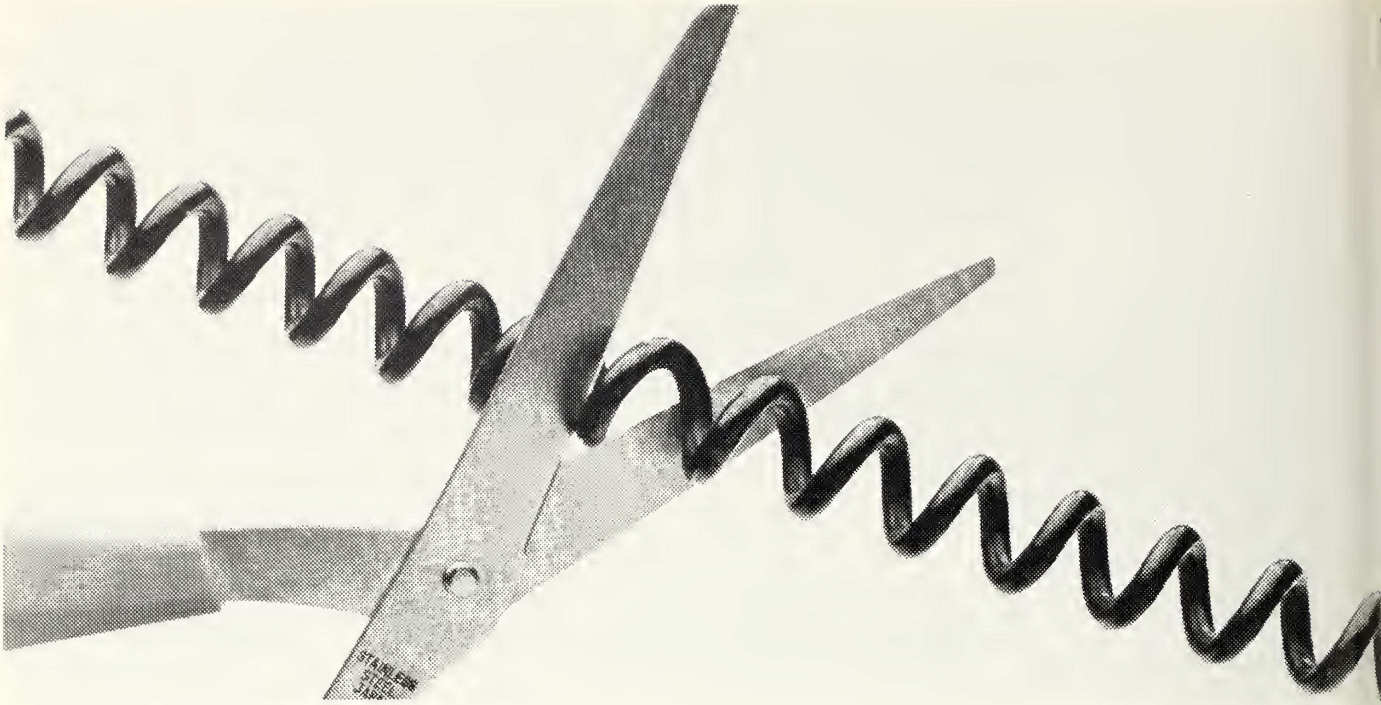

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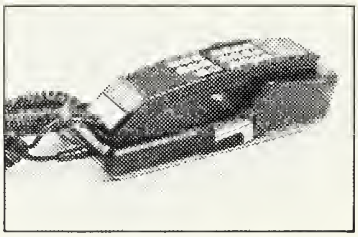

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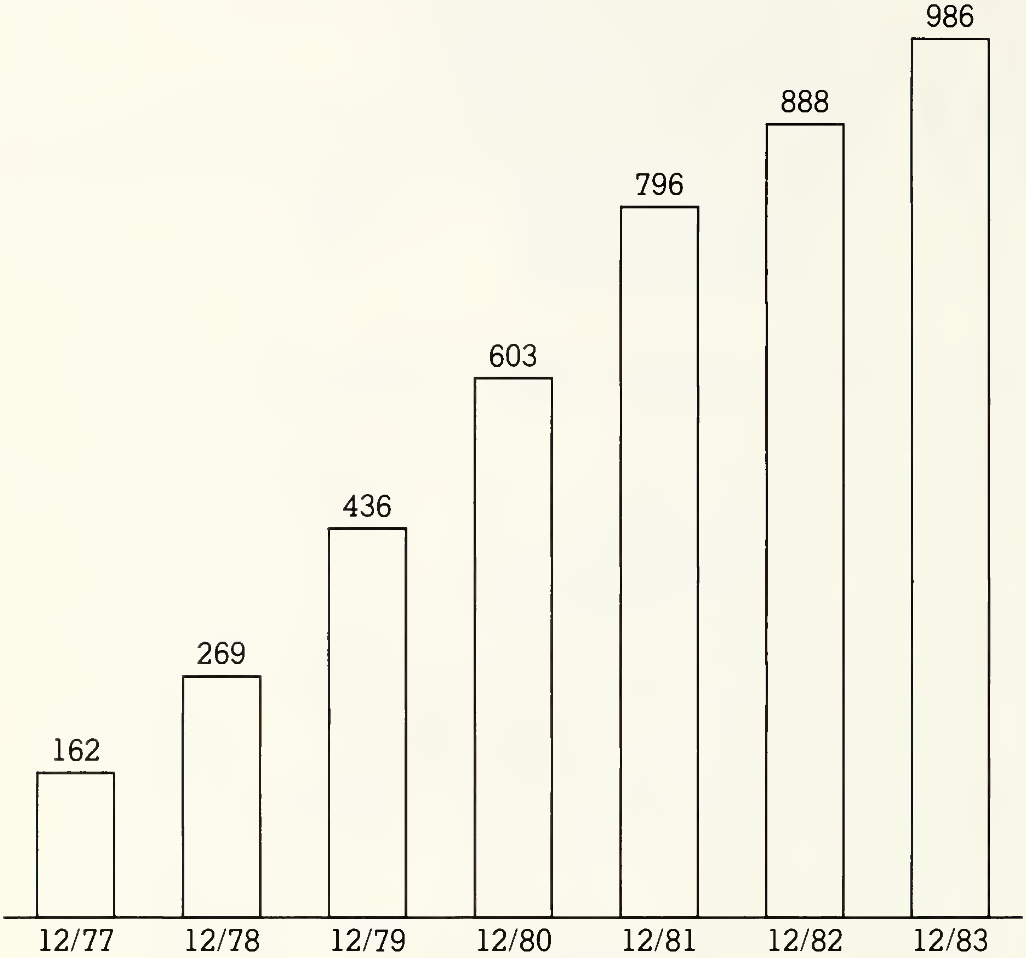

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with the diagnosis of vasospastic angina provided that the above criteria are satisfied PROCA
may also be used where the clinical presentation suggests a possible vasospastic compone
where vasospasm has not been confirmed e g where pain has a variable threshold on exert
in unstable angina where electrocardiographic findings are compatible with intermittent
spasm or when angina is refractory to nitrates and or adequate doses of beta blockers

II Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicat
the management of chronic stable angina (effort-associated angina) without evidence of vasos
in patients who remain symptomatic despite adequate doses of beta blockers and or organic n
or who cannot tolerate those agents

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in cont
trials of up to eight weeks duration in reducing angina frequency and increasing exercise toler
but confirmation of sustained effectiveness and evaluation of long term safety in those patien
incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDI
beta blocking agents may be beneficial in patients with chronic stable angina but available
mation is not sufficient to predict with confidence the effects of concurrent treatment especi
patients with compromised left ventricular function or cardiac conduction abnormalities Wh
troducing such concomitant therapy care must be taken to monitor blood pressure closely
severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS. Known hypersensitivity reaction to PROCARDIA

WARNINGS Excessive Hypotension Although in most patients the hypotensive effe
PROCARDIA is modest and well tolerated occasional patients have had excessive and poor
erated hypotension These responses have usually occurred during initial titration or at the ti
subsequent upward dosage adjustment and may be more likely in patients on concomitan
blockers

Severe hypotension and or increased fluid volume requirements have been reported in pat
receiving PROCARDIA together with a beta blocking agent who underwent coronary artery by
surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears
due to the combination of PROCARDIA and a beta blocker but the possibility that it may occu
PROCARDIA alone with low doses of fentanyl in other surgical procedures or with other na
analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high
fentanyl anesthesia is contemplated the physician should be aware of these potential problems
if the patient s condition permits sufficient time (at least 36 hours) should be allowe
PROCARDIA to be washed out of the body prior to surgery

Increased Angina Occasional patients have developed well documented increased frequency
ration or severity of angina on starting PROCARDIA or at the time of dosage increases The m
anism of this response is not established but could result from decreased coronary perfu
associated with decreased diastolic pressure with increased heart rate or from increased der
resulting from increased heart rate alone

Beta Blocker Withdrawal Patients recently withdrawn from beta blockers may develop a
drawal syndrome with increased angina probably related to increased sensitivity to catec
amines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expe
to exacerbate it by provoking reflex catecholamine release There have been occasional repor
increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is impo
to taper beta blockers if possible rather than stopping them abruptly before begin
PROCARDIA

Congestive Heart Failure: Rarely patients. usually receiving a beta blocker have developed h
failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater ris
such an event

PRECAUTIONS. **General Hypotension** Because PROCARDIA decreases peripheral vasc
resistance careful monitoring of blood pressure during the initial administration and titra
of PROCARDIA is suggested Close observation is especially recommended for patients alr
taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema: Mild to moderate peripheral edema. typically associated with arterial v
dilation and not due to left ventricular dysfunction occurs in about one in ten patients treated
PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diu
therapy With patients whose angina is complicated by congestive heart failure care should be t
to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experi
in over 1400 patients in a non-comparative clinical trial has shown that concomitant administra
of PROCARDIA and beta-blocking agents is usually well tolerated but there have been occasi
literature reports suggesting that the combination may increase the likelihood of congestive h
failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates. but there h
been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of tw
normal volunteers The average increase was 45% Another investigator found no increase in
goxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over
hundred patients with congestive heart failure during which digoxin blood levels were not m
ured digitalis toxicity was not observed Since there have been isolated reports of patients
elevated digoxin levels it is recommended that digoxin levels be monitored when initiating adj
ing and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis mutagenesis impairment of fertility When given to rats prior to mating
dipine caused reduced fertility at a dose approximately 30 times the maximum recommended
man dose

Pregnancy Category C Please see full prescribing information with reference to teratogenic
rats embryotoxicity in rats mice and rabbits. and abnormalities in monkeys

ADVERSE REACTIONS The most common adverse events include dizziness or light-headedn
peripheral edema nausea weakness. headache and flushing each occurring in about 10% of
tients transient hypotension in about 5%. palpitation in about 2% and syncope in about 0
Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant an
ginal medication Additionally the following have been reported muscle cramps. nervousn
dyspnea nasal and chest congestion diarrhea constipation. inflammation joint stiffness. sh
ness sleep disturbances blurred vision difficulties in balance dermatitis. pruritus. urticaria
ver sweating chills and sexual difficulties Very rarely introduction of PROCARDIA therapy
associated with an increase in anginal pain possibly due to associated hypotension

In addition more serious adverse events were observed not readily distinguishable from the
ural history of the disease in these patients It remains possible however. that some or man
these events were drug related Myocardial infarction occurred in about 4% of patients and con
tive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction dist
ances each occurred in fewer than 0 5% of patients

Laboratory Tests Rare. mild to moderate transient elevations of enzymes such as alkaline ph
phatase CPK LDH SGOT and SGPT have been noted and a single incident of significantly
vated transaminases and alkaline phosphatase was seen in a patient with a history of gall blad
disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therap
uncertain These laboratory abnormalities have rarely been associated with clinical sympto
Cholestasis possibly due to PROCARDIA therapy has been reported twice in the extensive w
literature

HOW SUPPLIED. Each orange soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedip
PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66) 300 (NDC 00
2600-72) and unit dose (10×10) (NDC 0069-2600-41) The capsules should be protected f
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"My daily routine consisted of sitting in my chair trying to stay alive."

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"I shop, cook and can plant flowers again."

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Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).

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* Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
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3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

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	WAS	NOW
Complete face lift	$941	$675
Eye lift, lower and upper	504	315
Breast augmentation	456	350
Tubal ligation	441	345
Breast biopsy	350	280
Tonsillectomy with or without adenoidectomy	354	295
Cataract extraction with implant	730	430
Dilatation and currettage	300	235
Inguinal hernia repair, unilateral	440	335
Cystoscopy	286	190
Bilateral myringotomy with tubes	286	225

Prices include: All time and supply charges utilized in the surgery area, routine lab work (urinalysis and hematocrit). Any additional tests, EKGs, pathology and X-rays not provided during a routine procedure will be an additional charge. Prices are subject to change on or after July 1, 1984.

These reductions are the latest in Humana's efforts to control health care costs. We will be pleased to answer your questions and I invite you to call me personally at 241-7630.

Sincerely yours,

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Richard Blackburn
Executive Director

Day Surgery

Arizona Medicine 1984

Each year for some time now, the College of Medicine has been invited to contribute articles to a specific issue of *Arizona Medicine*. This has provided a stimulus to faculty to prepare state-of-the-art updates on various topics deemed to be of interest to the practicing community physicians in Arizona. As I have watched these manuscripts evolve and the stature of the faculty and commitment over the years, I have been most pleased to see the product. Again this year, fascinating and thoughtful presentations have been prepared.

While many forms of continuing education have been tried, no doubt the medical journal remains the most commonly used and most frequently recorded as effective. When practitioners properly catalog and prioritize reading in relationship to learning needs, there is no better source of reinforcement of past learning nor form in which to obtain new information. Over the years, *Arizona Medicine* has addressed this reading format and improved and redirected its focus. The College of Medicine is honored and most appreciative of this opportunity to participate. I trust you will enjoy reading and find useful these articles just as I have.

Louis J. Kettel, M.D.
Dean,
College of Medicine

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Evaluation of the Patient with Jaundice — 1984

Richard E. Sampliner, M.D.

Evaluation of the patient with jaundice has always posed a diagnostic challenge. A number of recent articles about the approach of the patient with jaundice highlights this ongoing problem.[1-7] The importance of distinguishing extrahepatic from intrahepatic obstruction is crucial yet often difficult due to the multiplicity of etiologic processes. Delay in recognizing extrahepatic obstruction may result in sepsis and death, whereas surgery performed in a patient with intrahepatic obstruction due to parenchymal liver disease may result in operative mortality. In the last decade, new techniques of diagnosis and therapy have been developed which have altered radically the evaluation of the patient with jaundice. The purpose of this article is to review these new developments and delineate their role in the evaluation and management of the jaundiced patient.

Jaundice can be recognized when the bilirubin reaches a level of approximately three milligrams percent or greater. Evaluation of the patient begins with a thorough history and physical examination. The history must include details on drug use, hepatitis exposure, symptoms of biliary colic, fever, chills, night sweats and weight loss. Physical examination should focus on the stigmata of chronic liver disease: spider telangiectasias, palmar erythema, Dupuytren's contractions, abdominal wall collateral vessels, hepatosplenomegaly and ascites. The history and physical examination may provide clues that lead to the rapid identification of the cause of jaundice.

Physicians have long relied upon blood tests to evaluate the patient with jaundice. Liver blood tests have been labeled as having an intrahepatic (parenchymal, "medical") versus an extrahepatic (obstructive, "surgical") pattern; however, these tests often fail to distinguish between intrahepatic and extrahepatic jaundice. In a recent series of fifty patients with jaundice, the mean serum alkaline phosphatase, aspartate aminotransferase (AST,SGOT), and total bilirubin did not differentiate the group with intrahepatic from the group with extrahepatic obstruction.[5] An alkaline phosphatase that is more than three times the upper limit of normal is suggestive of extrahepatic obstruction and an aminotransferase that is more then ten fold elevated suggests an intrahepatic problem, but liver blood tests alone cannot with confidence identify the cause of jaundice in a given patient.

The criteria for hospital admission of the patient with jaundice need to be emphasized. A patient with fever or complications of liver disease such as encephalopathy or bleeding needs to be admitted. Furthermore, the patient who defies diagnosis after a brief outpatient evaluation requires admission to facilitate the diagnostic evaluation. A potential risk faced by the jaundiced patient is that ascending cholangitis will occur prior to appropriate therapeutic intervention. Additionally, extrahepatic obstruction lasting for months can result in secondary liver injury that in itself becomes a clinical problem. Such risks make timely evaluation of the patient essential.

Table 1
Causes of Intrahepatic Cholestasis

Drug Induced
Viral Hepatitis
Alcoholic Hepatitis
Hodgkin's Disease
Sepsis
Sarcoidosis
Primary Biliary Cirrhosis
Chronic Active Hepatitis
Postoperative Jaundice
Jaundice of Pregnancy
Benign Recurrent Cholestasis
Dubin—Johnson Syndrome

Before commencement of a workup to exclude extrahepatic obstruction, it is worthwhile to review the myriad of causes of intrahepatic obstruction. Table 1 presents a partial list of the wide spectrum of causes of intrahepatic obstruction. Clearly a prior diagnosis of liver disease, recent therapy with a known cholestatic agent, or a history of alcoholism will lead the physician to entertain a specific diagnosis. In an era where cost containment is becoming extremely important, a direct test to confirm the suspected diagnosis may be the next appropriate step.

Table 2 lists a number of diagnostic modalities which have been clinically applied over the last decade. This profusion of tests is available because diagnostic precision is essential for evaluating and appropriately managing the patient. The clinical challenge is to choose an appropriate sequence of tests to make the correct diagnosis and initiate therapy with minimal risk, time

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and expense to the patient. A number of tests which were formerly utilized in evaluating the patient with jaundice are currently of limited value, including upper gastrointestinal series, hypotonic duodenography, liver spleen scan and intravenous cholangiography.

Table 2
Diagnostic Tests to be Considered

Ultrasound (Real Time)
Computed Tomography
Nuclear Medicine Biliary Scan (HIDA)
Percutaneous Transhepatic Cholangiography
Endoscopic Retrograde Cholangiopancreatography

A good first imaging test in the jaundiced patient is the abdominal ultrasound (US). It is generally available, relatively inexpensive, noninvasive and safe, for it involves no radiation exposure or contrast material. However, ultrasound is limited by the experience and reliability of the interpreter, the obesity and intestinal gas pattern of the patient, and the quality of ultrasound equipment available. The predictive value of ultrasound is greatest in the obstructed patient in whom an enlarged biliary tree can be recognized.[4] Computed tomography (CT) is another noninvasive imaging modality. It is more expensive than ultrasound and employs radiation, but better delineates the pancreas and is not restricted by obesity or the intestinal gas pattern. The accuracy of computed tomography is comparable to that of ultrasound.[5] Both techniques are deficient in the recognition of common bile duct stones[9] and both will miss extrahepatic biliary obstruction in the absence of biliary tract dilatation. Obstructive jaundice in the absence of duct dilatation can occur in as many as ten percent of cases.[10]

Although nuclear medicine biliary imaging can be helpful in confirming the diagnosis of acute cholecystitis, it is of little value in the differential diagnosis of jaundice. Its predictive value is less than that of US and CT.[4,5] The major shortfalls of nuclear biliary imaging techniques are the inability to image the patient with extreme jaundice and the capability of recognizing only complete extrahepatic obstruction.

Currently extrahepatic obstruction can be excluded only by direct means. Visualization of the biliary tree by injection of radioopaque contrast dye will define the presence or absence as well as the location of obstruction and assist greatly in planning further procedures and therapy. When there is clinical suspicion of extrahepatic obstruction, a direct duct study should be done regardless of findings by US or CT. The timing of a duct study is important and should be considered a preoperative procedure. Because of higher risk in the presence of obstruction, a surgical team must be ready to intervene in a timely fashion in the event that a study demonstrates obstruction. A patient with extrahepatic obstruction should be treated with antibiotics covering gut flora prior to and after the procedure. In a patient with severe systemic disease or known liver disease, a direct duct study should be performed only when it is clinically feasible to intervene therapeutically. If surgery is the only therapeutic modality available, a critically ill patient who is not a candidate for surgery is therefore not a candidate for a direct duct study.

The most appropriate way to demonstrate the biliary tree in an individual patient is a function of the local availability of procedures, the local skills in performing the procedures and the next step that is contemplated. The advantages of percutaneous transhepatic cholangiography (PTC) are the demonstration of high lesions in the biliary tree which may not be adequately filled in a retrograde fashion and the ability to study patients who have surgically altered anatomy, i.e. a Billroth II anastomosis. The percutaneous route is successful in demonstrating dilated ducts more often than nondilated ducts.[11] As with many procedures, the published literature often indicates a very low complication rate, partially a result of the extensive experience of the author. When the overall experience with PTC is evaluated, however, there is a significant complication rate: three percent sepsis, four percent bleeding, two percent bile leak, and nearly one percent mortality.

The advantages of endoscopic retrograde cholangiopancreatography (ERCP) include the capability of demonstrating the pancreatic duct, visualizing and biopsing the ampulla, the ability to demonstrate the biliary tree when it is severely attenuated as in sclerosing cholangitis and the ability to more safely visualize the biliary tree in the presence of ascites and coagulopathy. The success rate in demonstrating bile ducts by ERCP is a function of the experience of the endoscopist.[12] The most common complications of ERCP are injection pancreatitis (one percent) and biliary sepsis (0.8 percent) with a 0.2 percent mortality rate.[12]

When extrahepatic obstruction has been documented, the traditional approach has been surgical intervention to relieve the obstruction. There are now two new therapeutic options available that do not involve surgery. One is the percutaneous placement of stents following a PTC. The other is the endoscopic retrograde placement of a stent. When successful, such stents can internally drain bile. Both of these procedures have significant complication rates—primarily sepsis. In the patient with a retained common bile duct stone after cholecystectomy or the elderly critically ill patient with a common duct stone, ERCP offers the opportunity of nonoperative sphincterotomy accomplished by electrocautery through the endoscope which can relieve extrahepatic obstruction. Endoscopic sphincterotomy now represents the procedure of choice in patients with common duct stone(s) following cholecystectomy.

The algorithm depicted in Figure 1 gives a guide to the approach of a patient with jaundice. Taking into account the specifics of an individual patient and the pitfalls of generalized approaches, this guide should help define the most appropriate path.

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Clinical Application of Diagnostic and Interventional Electrophysiology

Shoei K. (Stephen) Huang, M.D.
Frank I. Marcus, M.D.

Abstract

Clinical electrophysiologic study has advanced considerably from the simple descriptive His bundle electrocardiography to the induction and treatment of tachyarrhythmias. The introduction of acute antiarrhythmic drug testing during serial electrophysiologic studies and the endocardial mapping of arrhythmogenic foci are major therapeutic contributions. During the past two years, interventional electrophysiology has developed with the use of electrode catheters to ablate the arrhythmogenic foci in patients with intractable supraventricular or ventricular tachycardias.

This article reviews developments in the field of diagnostic and interventional electrophysiology with emphasis on the clinical indications and the therapeutic implications.

Key Words: Electrophysiology, catheter ablation, arrhythmias, programmed stimulation, His bundle recording.

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Introduction

In 1969, Scherlag, et al.[1] first described the technique of recording the His bundle electrogram in humans. Since then there have been progressive advances in the field of clinical electrophysiology. These advances include: 1) localization of A-V conduction disturbances to help determine the need for pacemaker therapy; 2) induction of clinical supraventricular and ventricular tachyarrhythmias in the electrophysiologic laboratory in humans and to determine the mechanism of the arrhythmia and evaluate responses to pharmacologic agents. These studies are also essential prior to implantation of antitachycardia pacing therapy or cardioversion-defibrillation devices; 3) development of cardiac mapping techniques to localize the arrhythmogenic foci in the electrophysiologic laboratory and in the operating room; 4) advent of surgical techniques to ablate the His bundle or accessory pathway in patients with paroxysmal supraventricular tachycardia refractory to pharmacological therapy or to excise arrhythmogenic foci in patients with ventricular tachycardia; and 5) use of intracardiac electrode catheter to focally ablate the His bundle or the arrhythmogenic foci.

Diagnostic Electrophysiology

General Principles

During an electrophysiologic study, cardiac events are analyzed as recorded from simultaneous surface electrocardiograms (ECG) and intracardiac electrograms. Intracardiac recordings are obtained from electrode catheters positioned in different locations of the heart (Figure 1), generally the high right atrium clos to the sinus node, the atrioventricular junction to recor the His bundle potential, the coronary sinus for left atria recording, the right ventricular apex or outflow trac and, in selected patients, the left ventricle. The numbe and location of the catheters vary with the case to b studied, although a minimum of two catheters i required for most studies. Multipolar catheters ar usually used to facilitate both recording and pacing fro specific sites within the heart. Programmed stimulatio techniques permit introduction of premature beats in a systematic fashion, with the coupling interval of the premature beat determined precisely. Premature beats can be coupled to either a spontaneously occurring or paced rhythm. Thus, any chamber of the heart can be paced at selected cycle lengths, and either one or multiple premature beats can be introduced. This makes it possible to test the susceptibility of the heart to arrhythmia initiation.

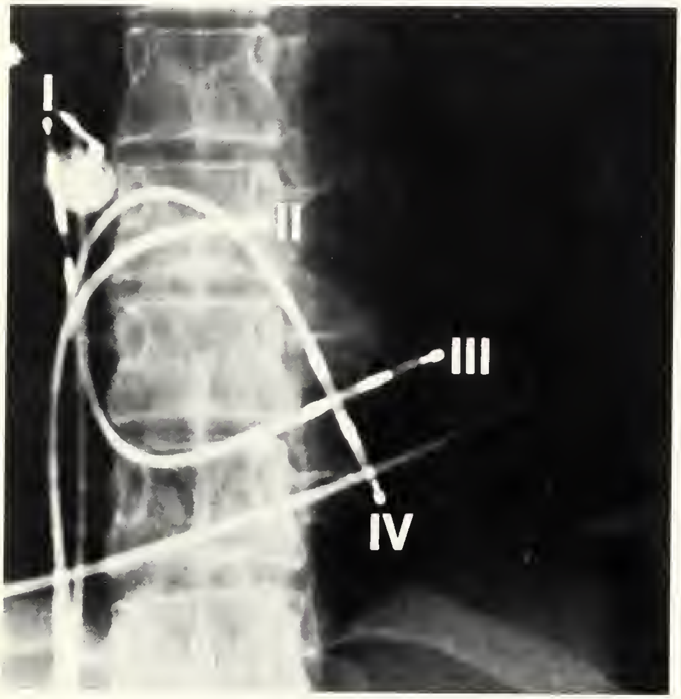

Figure 1
A roentgenogram demonstrates the location of intracardiac catheters during the electrophysiologic study. A quadripolar catheter (I) is placed in high right atrium near the superior vena cava. A tripolar catheter (II) is at the atrioventricular junction. Catheters (III) and (IV) are quadripolar and located in the coronary sinus and right ventricular apex respectively.

An electrophysiologic study is time consuming. A complete electrophysiologic evaluation may require two to three hours of testing or even longer if acute drug testing is done at the same time in the laboratory. The complications and risks of electrophysiologic studies are similar to those of right heart catheterization without angiography. The complications include local thrombosis, phlebitis, bleeding, and vessel or chamber trauma (Table 1). So far there has been no serious morbidity or mortality reported in any electrophysiologic laboratory. The clinical indications for electrophysiologic study are listed in Table 2, and will be discussed subsequently.

Table 1
Complications and Risks of Electrophysiologic Study

1. Nonarrhythmic complications — Local bleeding, deep vein thrombosis, phlebitis. Pulmonary embolization, local and systemic infection, pneumothorax (subclavian catheter insertion).
2. Initiation of an arrhythmia requiring countershock.
3. Potential risks: Cerebrovascular accident, myocardial infarction, vessel or cardiac perforation, dissection, etc.

Evaluation of Sinus Node Function

Over the past decade, a number of methods have been developed for evaluating sinus node function. These included the measurement of sinus node recovery time,[2] corrected sinus node recovery time, indirect,[3] and direct[4] measurements of sinoatrial conduction time, and the analysis of secondary pauses after the termination of rapid atrial pacing. There is good correlation between the sinoatrial conduction time estimated by the atrial premature stimulus technique and the directly measured conduction time in the presence of regular sinus rhythm.[4]

When a patient presents with syncope or presyncope and ambulatory ECG monitoring detects episodes of

Table 2
Clinical Indications for Electrophysiologic Studies

Define the mechanism of arrhythmias
  a. site of block in bradyarrhythmias
  b. wide QRS tachycardia - ventricular tachycardia vs supraventricular tachycardia with aberrancy
  c. paroxysmal supraventricular tachycardia - intranodal reentry vs atrioventricular reentry due to accessory pathways and other uncommon reentry
Guide therapy
  a. prediction of antiarrhythmic drug efficacy in refractory supraventricular or ventricular tachycardia
  b. after resuscitation for out-of-hospital cardiac arrest
  c. pacing therapy
    i. selection of pacing mode, i.e. VVI or DDD
    ii. antitachycardia device for refractory supraventricular or ventricular tachycardia
Identify patients at "high risk" for sudden death
  a. symptomatic Wolff-Parkinson-White syndrome (WPW), especially with history of paroxysmal atrial fibrillation
  b. asymptomatic WPW with professional hazard
Unexplained syncope
Mapping of arrhythmias prior to surgery
Assess the effects of surgical treatment of arrhythmias
Prior to implantation with newer device (automatic implantable cardioverter-defibrillator, DDD pacemaker)

mptomatic sinus bradycardia, sinus pause, or sino- rial block, a permanent pacemaker is indicated and ectrophysiologic testing to evaluate sinus node inction is not necessary. For such patients, a limited ectrophysiologic study at the time of permanent acemaker insertion may be performed in order to btain practical information to assist in the selection of acemaker mode, specifically single versus dual namber pacing. The information sought includes the resence or absence of retrograde ventriculoatrial onduction in the selection of DDD or VVI pacemaker, oncomitant A-V nodal disease to avoid the use of AAI node, and the ready inducibility of atrial flutter or brillation for the consideration of DVI or DDD acemaker. For the patient who does not have ymptoms but has documented sinus bradycardia, sinus auses, or sinoatrial block, we do not recommend nvasive electrophysiological evaluation of sinus node unction, since one cannot predict by this test which of nese patients will develop symptoms. Nevertheless, nese patients should be observed periodically for the nset of symptoms. Also all drugs that may depress sinus node function such as digitalis, or clonidine, should be liscontinued.

trial Function

The limitations of the surface ECG in the diagnosis of trial arrhythmias were reported by Wu, et al.[5] They lescribed a patient whose surface ECG was interpreted s showing atrial tachycardia with block whereas the lectrophysiologic study showed right atrial standstill nd a dissimilar rhythm in the left atrium. Atrial flutter an be initiated and terminated with atrial stimulation. Waldo, et al.[6] showed that atrial flutter can also be entrained and interrupted with atrial pacing and suggested reentry as the mechanism of atrial flutter. Atrial pacing has been most helpful in the management of atrial flutter after open heart surgery[6] and if electrical cardioversion is contraindicated. Electrophysiologic testing in patients with paroxymal atrial fibrillation has also proved useful in defining effective antiarrhythmic drug therapy for prophylaxis of recurrent atrial fibrillation.[7]

Atrioventricular Conduction

His bundle recording can accurately localize the level of AV block. Mobitz I (Wenckebach) block may occur in the AV node, His bundle or bundle branches, whereas Mobitz II block usually is localized to the His-Purkinje system. In patients with high grade or complete AV block and narrow QRS complexes, the block is within or proximal to the His bundle, whereas in patients with wide QRS complexes, the block may be proximal to, within or distal to the His bundle. Rarely, "pseudo-AV block" can exist secondary to concealed His bundle depolarization detected only by His bundle recording. Some patients have latent infra-His bundle disease which is found only with rapid atrial pacing (Figure 2).

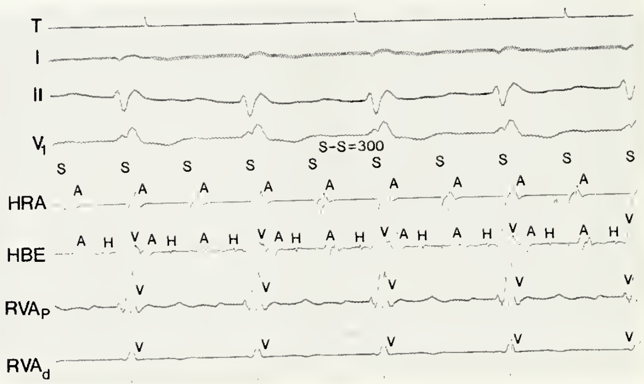

Figure 2
Intracardiac recordings showing 2:1 infra-His block during rapid atrial pacing at cycle length of 300ms. The tracings from the top are: time lines at one second intervals, simultaneous surface leads I, II, V₁, and intracardiac recordings of high right atrium (HRA), His bundle electrogram (HBE), proximal (RVAp) and distal (RVAd) right ventricular apex. S=stimulus spike; A=atrial deflection; H=His bundle deflection; V=ventricular deflection.

Conversely, electrophysiologic study can be entirely normal in patients who have intermittent high grade AV block on the surface ECG.[8] This indicates variable AV nodal conduction most likely due to changing autonomic tone. AV nodal conduction may be influenced by various drugs, such as beta-blockers, calcium-channel blockers, and digitalis. Thus, electrophysiologic evaluation of AV block is complementary to clinical information. The patient with symptomatic AV block does not need electrophysiologic testing to determine the need for pacemaker therapy. However, this procedure can be helpful to identify patients with asymptomatic chronic AV block within or distal to His bundle, for whom pacemaker implantation is advisable to prevent syncope. His bundle recording has not been useful in defining indications for pacing in patients with acute heart block related to acute myocardial infarction. In these patients, the indications for pacing are better defined by the site of infarction, the presence of bundle branch block, and the electrocardiographic pattern of block.

The predictive value of His bundle recording in the presence of bifasicular block (i.e. right bundle branch block plus left anterior or posterior fascicular block, left bundle branch block), has been a subject of much controversy. The HV interval (infranodal conduction time) has been advocated to predict the development of high grade block or sudden death. However, at least two large longitudinal studies have shown that measurement of HV interval is not helpful in predicting which patient with asymptomatic bifasicular block may develop complete heart block.[9,10] In symptomatic patients with bifasicular block electrophysiologic study may be helpful in determining the need for permanent pacing or antiarrhythmic drug therapy or both, since the test may reveal an occult tachyarrhythmia best treated with antiarrhythmic drugs, or sinus node dysfunction that requires a pacemaker.[10] Moreover, a normal electrophysiologic evaluation in symptomatic patients will be helpful in excluding a cardiac etiology, sparing the patient unnecessary pacemaker insertion.

Supraventricular Tachycardias

Electrophysiologic studies have provided important knowledge of the mechanism of paroxysmal supraventricular tachycardia (SVT). Supraventricular tachycardia similar to that seen clinically can be initiated and terminated in the laboratory with programmed extrastimulation techniques. The reentrant circuit can then be determined by recording from various sites in the heart during the tachycardia (Figure 3). In addition, drug effects can be reliably evaluated with serial electrophysiologic testing until a regimen is identified that prevents the reinitiation of SVT. At present, electrophysiologic study is usually reserved for patients with SVT refractory to empiric therapy or those with such incapacitating symptoms that a trial of empiric therapy would be disadvantageous, and for patients with wide QRS complex tachycardias in whom understanding the mechanism of arrhythmias is important for appropriate management. Reentrant mechanisms are responsible for PSVT in the majority of patients. Among these, AV nodal reentry is most common followed by atrioventricular reentry in the presence of an accessory pathway, and rarely intra-atrial reentry or sinus node reentry.[11] We will focus our discussion on AV nodal (micro reentry) reentrant and AV reciprocating (macro reentry) supraventricular tachycardias.

A - AV Nodal Reentry

The typical AV reentrant pathway is a circus movement involving dual AV nodal pathways with anterograde conduction over the slow pathway and

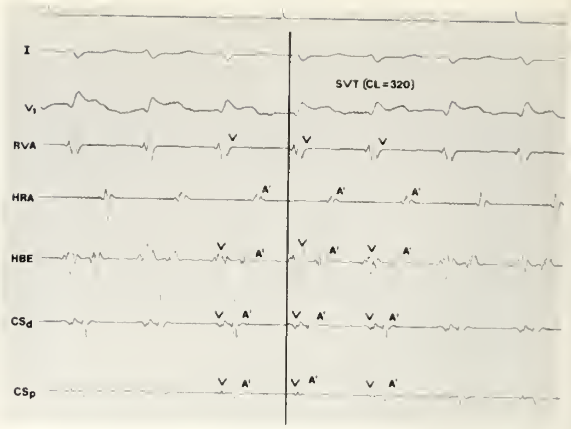

Figure 3
Intracardiac recordings during supraventricular tachycardi The tracings from the top are: time lines at one secon intervals, surface leads I, V_1, and simultaneous intracardi recordings of right ventricular apex (RVA), high right atriu (HRA), His bundle electrogram (HBE), distal (CSd) an proximal (CSp) coronary sinus. SVT=supraventricul tachycardia; CL=cycle length; V=ventricular deflection; A'=retrograde atrial deflection. The longitudinal solid lin indicate the time intervals of retrograde ventriculoatri conduction. The recordings demonstrate retrograd conduction over the left-sided accessory pathway an anterograde conduction over the AV node-His axis as th reentrant circuit during supraventricular tachycardia.

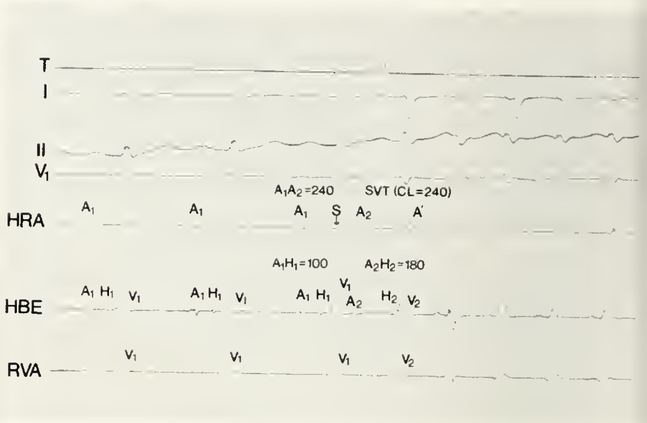

Figure 4
Initiation of AV nodal reentrant supraventricular tachycardia (SVT) with single atrial extrastimulus. Tracings from the top are: time lines at one second intervals, simultaneous surface leads, I, II, V_1, and intracardiac recordings of high right atrium (HRA), His bundle electrogram (HBE), and right ventricular apex (RVA). A_1 intrinsic atrial depolarization; H_1=His bundle deflection; V_1=ventricular depolarization. A premature atrial depolarization (A_2) delivered by an extrastimulus (S) from the high right atrium at a coupling interval of 240ms resulted in markedly slow conduction in the AV node over the slow pathway (A2-H2= 180ms; the previous A2-H2 interval was 130mg at an A1-A2 of 230ms) and initiated the usual type of AV nodal reentrant SVT.

ograde conduction proceeding over the fast way. Tachycardia can be induced and terminated a properly timed premature beat (Figure 4), either trial or ventricular premature depolarizations.

armacologic manipulation of the conduction pro- ies of these pathways with atropine can facilitate uction and maintenance of SVT, whereas depressing ograde fast pathway conduction with procainamide prevent induction of tachycardia. An unusual type V nodal reentry has also been demonstrated in ch the fast pathway is used in the anterograde ction and the slow pathway for retrograde duction (reverse circuit). During the usual type of AV al reentry, the P wave is inverted in leads II, III and on the surface ECG, and the P wave is usually within QRS complex or, less frequently, closely follows the S complex. In contrast, during the unusual type of AV lal reentry, the inverted P wave always precedes the S complex.

Atrioventricular Reentry Using the Accessory hway

Wolff-Parkinson-White (WPW) Syndrome

atients with WPW suffer from a variety of hyarrhythmias. The most common one is the narrow S reciprocating tachycardia (orthodromic) char- erized by anterograde conduction through the mal AV node-His pathway and retrograde duction by way of the accessory AV pathway (Kent ndle). This tachycardia can be easily reproduced in laboratory with either programmed atrial (Figure 5) ventricular (Figure 6) stimulation. Denes, et al.[12] found that tachycardia was inducible in 100% of patients with documented paroxysmal SVT, 67% of patients with documented paroxysmal atrial fibrillation, 36% of patients with palpitation without documented arrhythmias and 8% of asymptomatic patients with pre-excitation. The ability to induce reciprocating tachycardia in a high percent of patients with documented atrial fibrillation is consistent with the suggestion that spontaneous degeneration of paroxysmal SVT into atrial fibrillation may be a common cause of atrial fibrillation in such patients. Atrial fibrillation can degenerate to ventricular fibrillation due to rapid ventricular response during atrial fibrillation in a patient with a short refractory period of the accessory pathway. Digitalis is contraindicated in patients with WPW who have atrial fibrillation with a rapid ventricular response since this drug appears to increase ventricular vulnerability to ventricular fibrillation. Induction of atrial fibrillation in the electrophysiologic laboratory in patients with WPW has been helpful in identifying patients at high risk for the development of sudden death due to ventricular fibrillation.

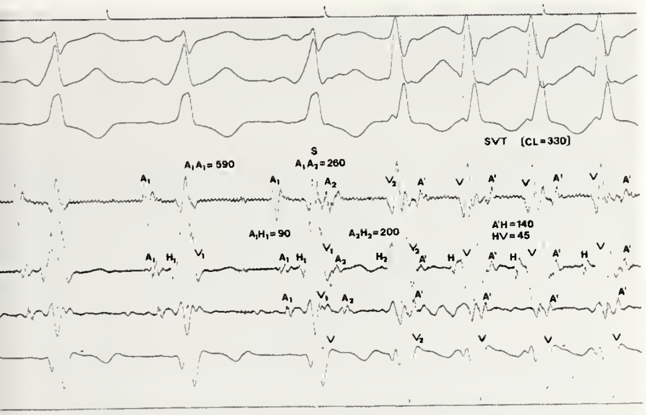

Figure 5

tiation of orthodromic AV reentrant supraventricular hycardia (SVT) in a patient with Wolff-Parkinson-White ndrome. The tracings displayed and the abbreviation of mbols are similar to previous figures. Note that the His ndle deflection is almost buried by the preexcited ntricular deflection during sinus rhythm and becomes sible during SVT. The tachycardia was initiated with a single rial premature depolarization at a coupling interval of 260ms, hich resulted in block of anterograde impulse conduction er the accessory pathway and prolongation of conduction er the AV node-His axis to initiate the AV reentrant chycardia. This circuit used the AV node-His axis as the terograde limb and the left-sided accessory pathway as trograde limb.

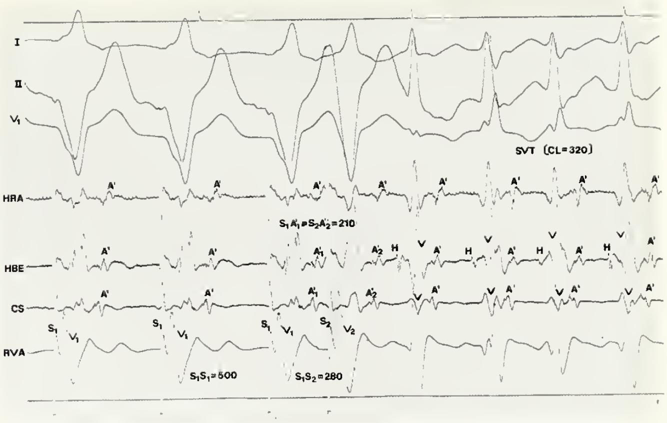

Figure 6

Initiation of identical orthodromic AV reentrant supraventricular tachycardia in the same patient as shown in Figure 5 by programmed electrical stimulation with the use of single ventricular premature depolarization. The display and abbreviation are similar to the previous figures.

Wide QRS regular tachycardias may be observed in WPW syndrome due to: 1) functional bundle branch block during the usual AV reentry; 2) the reverse form of reciprocating tachycardia (antidromic) using the accessory pathway for anterograde conduction and the normal pathway for retrograde conduction; 3) intra-atrial reentry or atrial flutter with 1:1 anterograde conduction over the accessory pathway; 4) AV nodal reentry with anterograde anomalous pathway; and 5) reentry utilizing nodoventricular or fasciculoventricular accessory pathway (Mahaim fiber). These tachycardias can be differentiated during electrophysiologic studies.

2. *Concealed Accessory Pathway*

Some patients whose electrocardiograms do not show pre-excitation develop paroxysmal narrow QRS SVT. The mechanism of this type of tachycardia is due to a concealed extranodal accessory pathway that is only capable of retrograde conduction. During tachycardia, the normal AV node-His pathway is utilized for anterograde conduction and the concealed bypass tract is used for retrograde conduction.

In summary, in patients with paroxysmal SVT an electrophysiologic study can be most useful in documenting the presence of an accessory pathway, determining the rate or the refractory period at which an impulse is capable of conducting during tachycardia, and evaluating the effects of drugs (Figure 7) in preventing either reciprocating tachycardia or atrial fibrillation. Using catheter techniques, it is also possible to localize the site of bypass tract for possible surgical or catheter ablation to interrupt the tachycardia circuit.

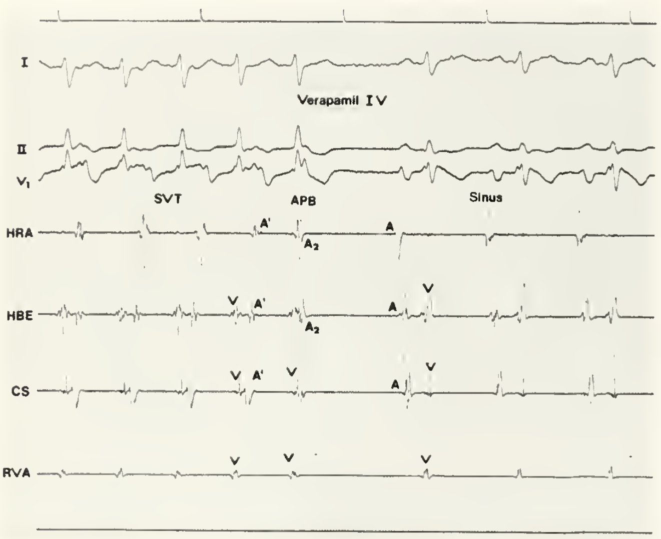

Figure 7
Termination of supraventricular tachycardia (SVT) by a spontaneous atrial premature beat (APB) during intravenous administration of Verapamil. The displays of tracings and abbreviations are similar to previous figures. During SVT the impulse conducts over the AV node-His axis anterogradely and conducts over the left-sided concealed accessory pathway retrogradely. Note that there is no preexcitation shown during sinus rhythm.

Ventricular Tachycardias

One of the major uses of clinical electrophysiologic studies at present is the evaluation of patients with life-threatening ventricular tachyarrhythmias. Most electrophysiologic laboratories devote considerable time and attention to the evaluation of therapeutic regimens for patients with either recurrent sustained ventricular tachycardia (VT) or out-of-hospital sudden death not associated with acute myocardial infarction. These patients often have ischemic heart disease, left ventricular dysfunction, and a ventricular aneurysm. Other patients have cardiomyopathy, mitral valve prolapse, long QT syndrome, and right ventricular dysplasia. Rarely, a patient may have recurrent ventricular tachycardia without structural heart disease (idiopathic VT). Patients with recurrent sustained VT, particularly those with ischemic heart disease, are susceptible to initiation of their VT with programm electrical stimulation. The use of this technique for was first described by Wellens, et al. in 1972.[13] Th postulated that reentry might be responsible ventricular tachycardia. In contrast to supraventricu tachycardia, the pathophysiology of ventricu tachycardia is not completely understood. There is a growing interest in knowing whether electrophysiolo testing can identify patients at high risk of developi lethal arrhythmias within certain populations, such patients after recent myocardial infarction, and patie with nonsustained ventricular tachycardia and l ventricular dysfunction. We shall limit our discussion the problems of chronic recurrent sustained ventricu tachycardia or ventricular tachycardia/fibrillati related to sudden death.

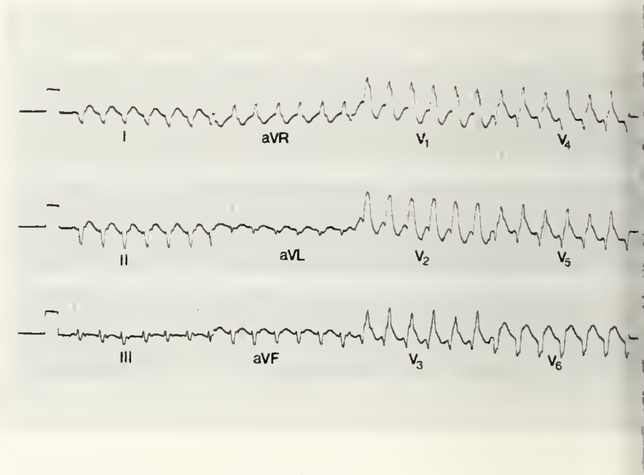

Figure 8
A 12-lead electrocardiogram in a patient with chro recurrent sustained ventricular tachycardia (VT). The rate of was 150 beats per minute. The morphology of VT was rig bundle branch block with a superior axis.

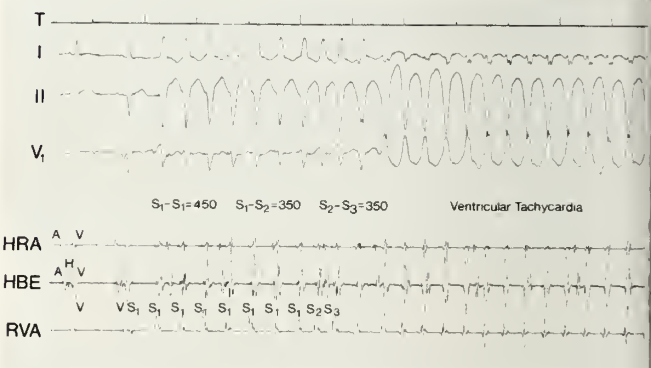
T
I
II
V1
S1-S1=450 S1-S2=350 S2-S3=350
Ventricular Tachycardia
HRA
A V
HBE
A H V
V VS1 S1 S1 S1 S1 S1 S1 S1 S2S3
RVA

Figure 9
Sustained ventricular tachycardia (VT) was induced programmed ventricular stimulation from right ventricul apex in the same patient shown in Figure 8. The display tracings and abbreviations are similar to previous figure Ventricular tachycardia was initiated with double extrastimu (S1-S1= 450, S1-S2= 350, S2-S3= 350). Note that the induced has the same morphology and rate as the patient's clinical shown in Figure 8.

hronic Recurrent Sustained Ventricular cardia

tained ventricular tachycardia can be induced with
ammed ventricular stimulation (Figure 8 and
e 9) in 90% of these patients who have ischemic
disease when they are not receiving anti-
hmic drugs.[14] Most patients (63%) require double
timuli from the right ventricle for induction of the
cardia.[14] Left ventricular stimulation is required in
han ten percent of patients. The induced sustained
n usually be terminated with stimulation, either by
timuli or rapid pacing (Figure 10). Some patients
re cardioversion after sustained VT is induced. The
t which the ventricular tachycardia originates can
sessed with endocardial catheter mapping or pace
ing of both ventricles (Figure 11 and Figure 12) in
aboratory and with epicardial and endocardial
ing in the operating room.[15] Surgical therapy for
ment of VT has been attempted initially with
nary artery bypass grafting with or without
rysmectomy with a high recurrence of arrhythmias.
equently, it has been demonstrated that the earliest
rical activity during VT initiates from the
cardium and most frequently within the border
of infarcted tissue. Thus, the technique of
cardial excision guided by endocardial mapping
developed[15] which has an operative mortality of
t percent and an overall success rate of
oximately 85% for the elimination of VT. At the
ersity of Arizona, two patients have undergone
ar procedures in the past several months without
rrence of this arrhythmia.

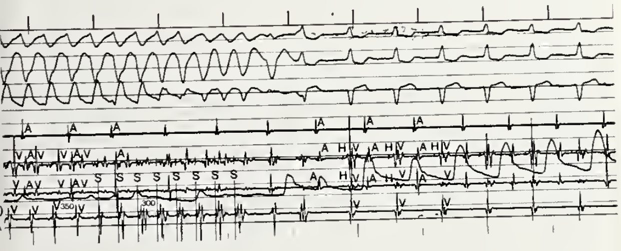

Figure 10
mination of ventricular tachycardia (cycle length of 350ms)
rapid ventricular pacing at cycle length of 300ms. The
bols and abbreviations are described in previous figures. In
ition, a blood pressure (BP) recording from the femoral
ry (FA) is simultaneously displayed to show the marked
erence of BP during ventricular tachycardia and during
is rhythm.

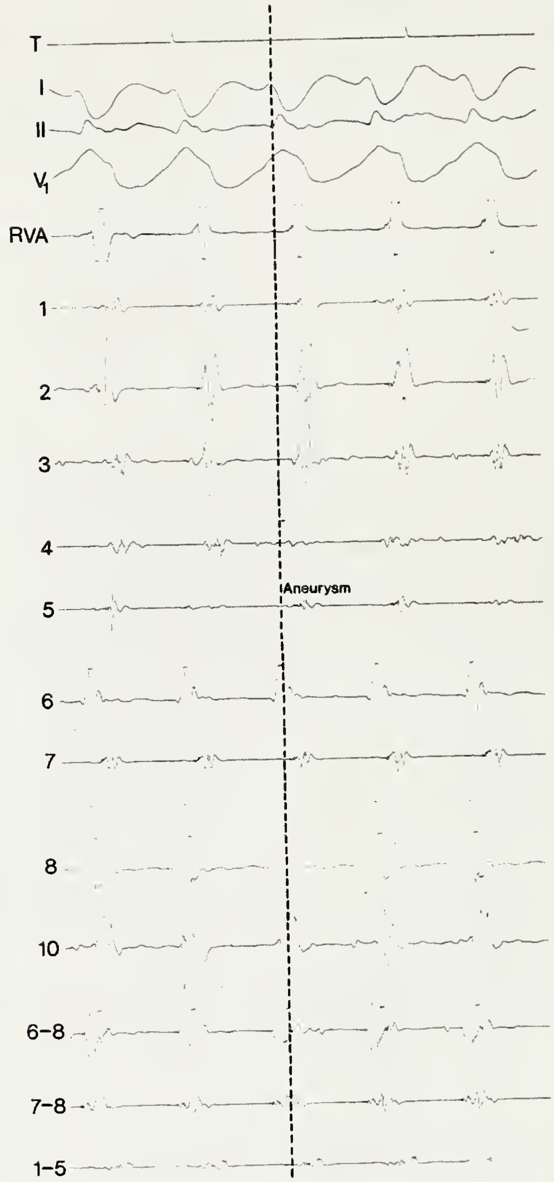

Figure 11
Left ventricular endocardial catheter mapping during sustained ventricular tachycardia. Surface leads I, II, and V_1 are recorded simultaneously with an intracardiac reference electrogram (right ventricular apex, RVA) and multiple recordings from the mapping catheter in the left ventricle. The mapping sites correspond to the schema reported by Josephson, et al.[15] Site 1 in the left ventricular apex, site 2 in the low septum, site 3 in the mid septum, site 4 in the high septum, site 5 in the posterior inferior wall (aneurysm), site 6 in the posterobasal wall, site 7 in the low posterolateral, site 8 in the high posterolateral wall, and site 10 in the high anterolateral wall. The earliest sites of endocardial activation (6-8) are above the aneurysm and demonstrate early fractionated activity. In contrast, the low amplitude fractionated activity occurs late inside the aneurysm (site 5).

B - Out-of-Hospital Sudden Cardiac Death

Ruskin, et al.[16] studied 31 survivors of cardiac arrest who had documented ventricular tachycardia or fibrillation at the time of resuscitation not associated with an acute myocardial infarction. The clinical arrhythmia was reproduced in 25 patients (81%) in the laboratory. In 19 of 25 (76%), complete suppression of inducible ventricular arrhythmia was achieved with antiarrhythmic therapy. During a mean follow-up of 15 months, none of the 19 patients in whom an effective drug regimen could be identified have died suddenly or have had a symptomatic arrhythmia. Of the six patients in whom inducible arrhythmias could not be suppressed, three (50%) died suddenly within six months. Thus, survivors of prehospital cardiac arrest not associated with an acute infarction frequently have inducible ventricular arrhythmias, and pharmacologic suppression using effective agents identified by serial electrophysiologic testings can prevent symptomatic arrhythmias and sudden death.

C - New Devices for Ventricular Tachyarrhythmias

It has been noted that ventricular tachycardia with a slow rate can be terminated with pacing. Occasionally, pacemakers have been inserted to automatically detect and terminate VT. Electrophysiologic testing is essential in assessing which patients will benefit from this form of therapy. Since pacing may accelerat tachycardia with resultant hemodynamic coll careful and repeated electrophysiologic evaluati important prior to the insertion of antitachyc pacemaker for this arrhythmia. The recent develop of an automatic implantable defibrillator appears useful for patients who have ventricular t cardia/fibrillation not completely prevented by therapy and who are not candidates for surgical the

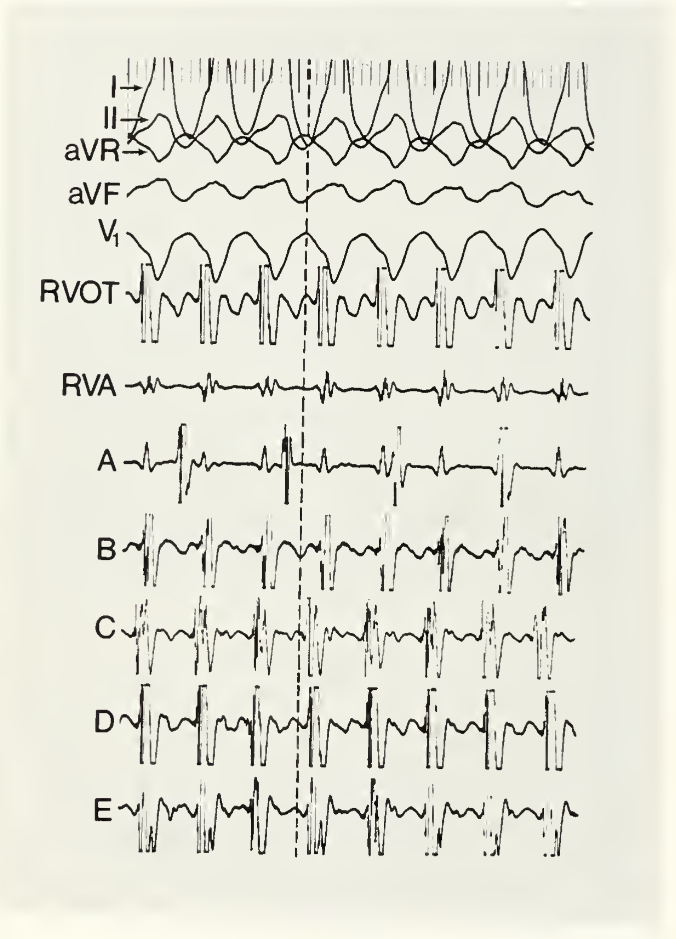

Figure 12

Right ventricular endocardial catheter mapping during sustained ventricular tachycardia in a patient with arrhythmogenic right ventricular dysplasia. RVOT=right ventricular outflow tract, RVA=right ventricular apex, site A in the inferior wall, site B in the anterior wall, site C in the high infundibulum, site D in the low infundibulum, and site E in the low septum. The earliest site of endocardial activation (site C) occurs in the high infundibulum of the right ventricle. The ventricular tachycardia shows left bundle branch block with a normal axis.

Unexplained Syncope

DiMarco, et al.[17] evaluated 25 patients with recu episodes of syncope that were unexplained de thorough medical and neurological evaluation. T individuals underwent invasive electrophysio study. In 17 (68%), an abnormality could be iden that could explain the syncope. In 9 of 17 (53%) inducible ventricular tachycardia not identifiabl noninvasive testing. Recurrent syncope was preve in 14 (82%) of the 17 when therapy was based or electrophysiologic findings. More recent studie Hess, et al. and Akhtar and his co-workers confirmed these observations. Our observations b on 59 patients with unexplained syncope also sug that: 1) patients who have a cardiac etiology ident by electrophysiologic studies and subsequently tre appear to have low incidence of recurrent syncop patients with inducible sustained ventricular tachyca almost always have organic heart disease; and 3) the no correlation of abnormal findings by H monitoring with the abnormal results by ele physiologic study.

Interventional Electrophysiology

General Principles

Patients with intractable supraventricular or tricular tachycardias refractory to medical treatr may be considered as candidates for surg interruption of the tachycardia circuit. However, du the past two years, the electrode catheter which been used for intracardiac recordings and pacing been utilized for closed-chest electrocauterizatio the atrioventricular junction,[18] accessory pathway,[19] arrhythmic ventricular foci.[20] Catheter abla technique in humans was first described by Gallaghe al. for supraventricular tachycardia.[18] They used di current stored energy (200-300 J) delivered to the d pole of the electrode catheter that was placed in atrioventricular junction to ablate the His bundle.

All prospective patients for these procedures r undergo careful electrophysiologic study in orde define the mechanism of tachycardia and localize arrhythmogenic foci or circuit. The ablation proced is usually performed under general anesthesia wi short-acting intravenous anesthetic agent such sodium pentothal. When the catheter is in place ready for ablation, the terminal pole of the cathet connected to the cathode of a standard cardiover unit. The paddle which is connected to the anode of cardioversion unit is placed in contact with the c

The energy required to achieve successful ablation s extensively. In general, it requires at least 200-300 J repeat the shocks are often needed to cause anent ablation. The potential indications for such ventional electrophysiology are listed in Table III. plications of the procedure appear to be similar to of routine electrophysiologic study. However, al risks include complete heart block after ablation e AV junction requiring permanent pacemaker tion, initiation of ventricular fibrillation during ion, and the potential risks of systemic or onary embolization.

ventricular Junction Ablation

1982, Gallagher, et al.[18] described successful His dle ablation in nine patients with recurrent aventricular tachycardia that was unresponsive to ical management. Eight patients developed plete heart block with a stable escape rhythm. In the aining patient, conduction in the AV node was ified, resulting in alternating first and second ee AV block. All patients remained free of ythmia without medication for follow-up of two to nonths. Scheinman, et al. subsequently confirmed e results in ten patients.

essory Pathway Ablation

sher, et al.[19] described a technique of inserting a eter into the coronary sinus in patients with left-d Kent bundle and delivering shocks in the region of coronary sinus in close approximation to the essory pathway. This technique is used to prevent or lify anterograde conduction over the bypass tract. vever, it should be emphasized that catheter tion of the accessory pathway is experimental since risk of possible damage to the coronary sinus or onary arteries is unclear.

Table 3
Potential Indications for Catheter Ablation

Arterioventricular junction
  a. refractory AV nodal reentrant supraventricular tachycardia
  b. refractory atrial fibrillation or flutter with rapid ventricular response without an accessory pathway
  c. refractory AV reciprocating tachycardia utilizing an accessory pathway with the anterograde conduction over the AV node-His axis
Accessory pathway
  a. atrial fibrillation with rapid anterograde conduction over the bypass tract
  b. refractory AV reciprocating tachycardia where the accessory pathway is an essential part of the tachycardia circuit
Ventricle
  a. refractory sustained ventricular tachycardia

al Ventricular Ablation

he application of this technique in man was recently orted by Hartzler,[20] who described successful ation in three patients with recurrent ventricular hycardia unresponsive to both medical and surgical therapy. At the University of Arizona we have performed similar procedures in two patients. The first patient was in shock due to incessant ventricular tachycardia refractory to drug and pacing regimens following coronary artery bypass surgery. He was free of ventricular tachycardia for 36 hours after the catheter ablation procedure performed with low delivered energy (100 J). He died of recurrent ventricular fibrillation. Autopsy found no evidence of injury at the site of catheter ablation. The second patient had chronic recurrent sustained ventricular tachycardia refractory to the conventional and experimental antiarrhythmic drugs, including Amiodarone. He was at high risk for surgical therapy because of severe obstructive lung disease and a huge posteroinferior aneurysm. After the ablation procedure performed using multiple shocks with high energy (300 J), he has not had symptomatic ventricular tachycardia up to two months of follow-up.

The use of catheter ablation techniques for patients with ventricular tachycardia depends on the ability to induce the tachycardia in the laboratory. The patient must remain hemodynamically stable to allow for adequate endocardial catheter mapping in order to localize the tachycardia focus. This technique must still be considered experimental in view of the limited experience reported to date.

In conclusion, catheter ablation procedures appear to be promising for selected patients with drug refractory cardiac arrhythmias. The techniques described are relatively new and experience is still limited.

Summary

In the past decade, electrophysiologic study has progressed from simple His bundle recording to a complex procedure to define the mechanism of arrhythmias as well as to treat certain arrhythmias. With the programmed stimulation techniques and multiple catheter recordings, our knowledge of the mechanisms of supraventricular tachycardia has been greatly expanded. The precise role of the electrophysiologic study to manage patients with ventricular tachycardia or sudden death is still not entirely defined. Objective data is required to critically assess the role of programmed stimulation in the prediction of drug therapy for patients with ventricular tachycardia and in the identification of patients at high risk for sudden death. Further advances in technique to localize the origin of the tachycardia with greater precision are also needed to improve surgical and catheter ablative techniques. The continued exploration of new and safe antiarrhythmic agents and the new antiarrhythmic devices indicates that there should be rapid progress in the treatment of arrhythmias.

Acknowledgement

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Colorectal Carcinoma

New Approaches for Advanced Disease

Hugo V. Villar, M.D.
David S. Alberts, M.D.

Abstract

Cancer of the colon is one of the most comr malignancies in the United States. Detection of oc blood in the stool and widespread use of endosc lead to early diagnosis and treatment. Segme resection with primary anastomosis is the treatmen choice. Management of advanced disease has b facilitated by the use of CEA levels and CT scans. patients with widespread intra-abdominal disease therapeutic attempts must be considered experime since there is no standard treatment which prolo survival. Combination systemic therapy with methotr ate, 5-fluorouracil and leucorvin is being investigate the University of Arizona Cancer Center and elsewh Localized liver disease may be amenable to surg resection with excellent results. Diffuse liver invo ment may be treated by insertion of a perman infusion pump system for delivery of FU Intraperitoneal chemotherapy using 5-fluoroura mitomycin C and mitoxantrone is being investigated treatment of diffuse intra-abdominal disease. Regio chemotherapy maximizes the drug concentration intra-abdominal or liver tumors, while minimizing systemic absorption and consequent toxicity of drug. Encouraging new modalities of treatment advanced colorectal malignancies are on the horizo

Key Words: Colorectal Cancer, Systemic, Regio and Intraperitoneal Chemotherapy.

Cancer of the colon and rectum is one of the m common internal malignancies in the United State

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urs in approximately five percent of U. S. born males six percent of females. It is the second most nmon malignancy in males (second only to lung cer) and the third most common in females lowing lung and breast cancer).[1] The rates of dence and survival following surgical resection have significantly improved in the last forty years, except a significant decrease in mortality following surgical ection. This diminution is due to improvement in sthesia management, antibiotics, transfusions and rall better perioperative management. High risk ients can routinely undergo successful surgical cedures with low morbidity and mortality.

atomy

he large intestine extends from the terminal ileum to anal canal and may be subdivided into right, middle, l left colon, sigmoid, and rectum. The rectum ludes the intraperitoneal part of the colon, the last 12 .[2] About two-thirds of all colon and rectal lignancies are localized in the rectosigmoid area; wever, over the last 20 years there has been a shift in location of colorectal carcinomas with significant rease in lesions located on the right side.[3,4] Currently, nors of the cecum account for about 15% of all cinomas of the colon and rectum. The reason for this nge is unclear. In general, tumors of the right colon seen more frequently in females and rectal cinomas are more frequently seen in males.

ology

No major breakthrough has been made in this field. ere are substantial international variations in the idence of colorectal carcinoma around the world h very low incidences in Japan and Africa. When the ldren of immigrants from low risk countries move to U. S., their incidence of colorectal carcinoma equals t of the U. S. natives. This indicates that the cause of difference in the incidence is environmental, not netic. The most common factor mentioned is the *low-* *er diet* which may lead to a low bulk stool and a slow nsit time which may allow a longer time for the rmation of carcinogens in the gut and a longer period ring which these carcinogens are in contact with the t wall. The *high fat content* of the diet may lead to the oduction of acid and neutral steroids and their etabolites, some of which have structural similarities to own carcinogens.[5] Bile acid may also play a role, with gh fecal bile acid concentration often found in tients with cancer of the colon. The bacterial content the gut, particularly the anaerobic flora capable of conjugation of bile salts, varies with diet and may be important factor in determining the chemical mposition of the gut content.[6]

agnosis

Clinical assessment includes medical history and ysical examination. A history of blood in the stool ould be carefully evaluated. Hemorrhoids should be a agnosis of exclusion and only after malignancy has een ruled out. The diagnostic sequence should include Hemoccult slide test times three, rectal examination, proctosigmoidoscopy, barium enema, colonoscopy if the results of the barium enema are inconclusive, and carcinoembryonic antigen (CEA) levels. A CT scan is not necessary for the initial treatment of a patient with a colorectal carcinoma; however, it is a useful baseline study for following the patient postoperatively. The major impact on early diagnosis has been the widespread use of flexible sigmoidoscopes and the ease and availability of colonoscopy.

Staging of Colorectal Carcinoma

The American College of Surgeons has strongly supported the American Joint Committee on Cancer in developing a system to properly assess the extent of colorectal carcinoma. The advantages of proper staging are multiple. It helps in evaluating different treatment modalities, to choose the best treatment, and to compare treatments from different institutions. This staging system is based on the TNM system developed by the American Joint Committee on Cancer. T accounts for the primary tumor, N for regional lymph nodes and M for distal metastasis. The staging for almost any tumor is designed by a combination of suffixes, depending on the size of the tumor (T), the presence of positive or negative lymph nodes (N), and the status of distal metastasis (M). The TNM classification for colorectal carcinoma is as follows:[7]

Stage Grouping

Stage I:
  Stage IA: T1, NO, MO
    Tumor confined to mucosa or submucosa
  Stage IB: T2, NO, MO
    Tumor involves muscularis propria but not beyond
  Stage II: T3, NO, MO
    Tumor involves all layers of bowel wall with or without invasion of immediately adjacent structures
  Stage III:
    Any T, N1-3, MO
    Any degree of bowel wall invasion with regional node metastasis T4, NO, MO
    Tumor extends beyond the contiguous tissue or immediately adjacent organs with no regional node metastasis
  Stage IV: Any T, and N, M1
    Any degree of invasion of bowel wall with or without metastasis

A comparison between the new AJCC classification and the old Duke's and Astler-Collie classifications is shown in Table 1.

The National Surgical Adjuvant Breast and Bowel Project (NSABBP) has just published their findings from data obtained from 1,021 patients entered in two randomized prospective clinical trials. Their study examined the prognostic significance of tumor location and bowel obstruction in Duke's B and C colorectal cancer. Tumor location proved to be a strong prognostic discriminate with lesions of the rectosigmoid and rectum having the worst prognosis. Lesions of the left colon have the best prognosis. The presence of bowel obstruction strongly influences the prognostic outcome but only on the right side of the colon. The occurrence of bowel obstruction in the right colon is associated with a significantly diminished disease-free interval while obstruction in the left colon demonstrates no such effect. These findings are in agreement with the common clinical observation that carcinomas of the right side, specifically cecum, may achieve a large size and eventually cause an obstruction before diagnosis is made. On the other hand, a small circumscribed lesion of the left descending colon may cause early obstruction, leading to early diagnosis and treatment. In addition, it confirms the poor prognosis of low rectal lesions.[8,9]

Treatment

The treatment of carcinoma of the colorectal area is segmental resection with primary anastomosis. The low lying rectal carcinomas measuring less than 3 cm in diameter may be managed safely by local transanal or transacral excision rather than by abdominal perineal resection.[10,11] Encouraging information in this regard was presented by Dr. Robert Beart from the Mayo Clinic at the 1983 Clinical Congress of the American College of Surgeons. Similarly encouraging results have just been published by Dr. Localio and associates from the New York University College of Medicine.[9]

Management of Advanced Disease - A serum CEA level should be obtained in all patients prior to surgery. If the CEA level is elevated then it will serve as an important marker for disease recurrence during the five and ten year follow-up period. After initial segmental resection in patients at high risk of relapse (i.e. Duke's C disease) the protocol used at the Arizona Health Sciences Center includes a clinical visit every two to three months. A CEA level is obtained one month following surgery along with a baseline CT or ultrasound scan of the liver and abdomen. CEA levels are then drawn quarterly during the first year and every six months thereafter. A colonoscopy is done on a yearly basis. We prefer a colonoscopy to a barium enema because of the possibility of finding small, new lesions. In our experience, about five percent of patients develop a second carcinoma.[12] If CEA levels rise, they are repeated and a CT scan is performed and compared to the baseline study. A rise in the CEA level, even in the presence of a normal CT scan, is a strong indication for reexploration. In a few patients, localized disease can be reexcised. In our experience, this has happened in about one-third of the reexplorations.

Treatment of metastatic disease localized to the liver - If the patient has metastasis which seems to be localized to the liver, consideration is given to surgical resection. Careful evaluation of the CT scan of the abdomen is imperative. The presence of a solitary metastasis and the possibility of excision are the prime considerations in further management.[13] If the disease is diffuse and involves both liver lobes, consideration is given to insertion of an Infusaid Implantable Drug Delivery System (Infusaid Corporation). The pump is a lightweight, silent, reliable device with a 50 ml chamber capacity which delivers drugs at the fixed rate of ab
2.5 to 3 ml per day. The pump has been approved by
FDA for use with 5-FUDR for regional chemothera
The advantage of this approach is that a high c
centration of the drug can be delivered to the tumo
the liver, and because of the high extraction ratio fo
FUDR in the liver, only a low concentration of the dr
reaches the systemic circulation. Thus, regional chem
therapy maximizes drug concentration in the liver wh
minimizing systemic drug toxicity.

The majority of patients with colorectal metastasis
the liver treated with regional chemotherapy sh
objective tumor regression with decrease in their C
level and tumor size. Data have recently been publish
by Balch, et al.[14] on a prospective clinical trial usi
historical controls which showed a median survival of
months in 81 patients treated with 5-FUDR by Infus
pump therapy. In contrast, the historically match
controls survived only a median of eight mont
Unfortunately, there has been an excessively hi
systemic relapse rate of the disease in patients receivi
continuous 5-FUDR infusions[14] through the hepa
artery.

Insertion of the pump is a major surgical procedu
The silastic catheter is placed at the junction of the rig
and left hepatic artery through the gastroduode
artery. The pump is inserted into a subcutaneous pock
in the abdominal wall. The pump requires refill
through a percutaneous needle every two weeks. T
major drawback of the pump is the cost (approximat
$3,500). The device is safe, reliable, and can also be us
for delivery of other drugs, such as heparin, insulin, e
We have had no complications from insertion of t
pump; however, our experience is too limited to dra
significant conclusions, and these implantable pum
probably should only be used in the context of a clinic
research project. We are participating in a nationwi
study comparing the efficacy of continuous infusion 5F
by peripheral administration and 5-FUDR given throu
the implantable pump into the hepatic artery.

Patients with widespread metastatic colorectal car
noma - For the patient with diffuse abdominal metast
sis, with or without hepatic metastasis, the optio
available at the present time include systemic chem
therapy and high-dose intraperitoneal chemotherap

Systemic chemotherapy - 5-fluorouracil has prove
the most active single agent for systemic therapy
colon cancer. Response rates have varied between 15
and 20%, regardless of schedule of administration. M
physicians presently use a weekly dosing schedule of 5
mg/m2. Unfortunately, the small number of responde
have short-term remissions and there has been
evidence that 5-fluorouracil has improved the survival
the entire group of responders plus nonresponde
More recently, a great deal of interest has focused on t
combination of methotrexate with 5-fluorouracil.
schedule which sequences 5-fluorouracil 12 to 24 hou
prior to methotrexate, followed by leucovorin resc
has been investigated by several groups. Response rat

Table
Stage Classification and Stage Grouping
(AJCC, Dukes, Astler-Coller)

AJCC	Dukes	Astler-Coller
ge 0		Stage 0
arcinoma in situ		
s, NO, MO		0
ge I	A	Stage 1
\: Tumor confined to mucosa		
r submucosa		
, NO, MO		
3: Tumor involves muscularis	A	A
ropria but not beyond		
2, NO, MO	A	B1
ge II	B	Stage II
volvement of all layers of bowel		B2
all with or without invasion		
f immediately adjacent structures		
3, NO, MO		
ge III		
ny degree of bowel wall with	C	Stage III
egional node metastasis		
ny T, N1-N3, MO	C1	C1
xtends beyond contiguous tissue	C2	C2
r immediately adjacent		
rgans with no regional lymph		
ode metastasis		
, NO, MO		
ge IV	Type 4	Stage IV
ny invasion of bowel wall with or	D	D
ithout regional lymph node		
etastasis but with distant		
etastasis		
ny T, any N, MI		

ve been reported as high as 60% in good performance itus patients.[15] Currently, at the University of Arizona incer Center, a variation of this combination is being aluated in a phase II clinical trial.

Because of the lack of activity of other standard nticancer drugs, except mitomycin C, considerable forts have been made to develop new anticancer ents with activity against colon cancer. Most recently, rugs entered into clinical trial at the University of rizona have included an analogue of doxorubicin, 4' eoxydoxorubicin. This drug, which is approximately vo times as potent as the parent compound idoxorucin or adriamycin, appears to have less cardiotoxicity ian doxorubicin and, in preclinical trials, appears to ave little if any cardiotoxicity, but considerable activity gainst a common variety of murine colon cancer. We e currently carrying out a trial of 4'deoxydoxorubicin colon cancer patients who have failed standard iemotherapy approaches.

Intraperitoneal chemotherapy - By administering an nticancer drug directly into the intraperitoneal space in atients with intra-abdominal carcinomatosis, it is ossible to maximize the concentration of drug exposed the intra-abdominal tumor while minimizing the ystemic exposure and thus systemic toxicity from the drug. 5-fluorouracil, mitomycin C and mitoxantrone are three agents which appear to be metabolized in the liver and thus are likely to reach the systemic circuit in low drug concentration after intraperitoneal administration. More than 60% of these agents are likely to exit the intraperitoneal space through the portal circulation. Thus, liver metastases can be exposed to these agents when given by intraperitoneal administration, but systemic toxicity is minimal since the drugs are likely to be detoxified as they exit the liver.

Intraperitoneal chemotherapy as designed in the University of Arizona Cancer Center protocols involves the use of a special silastic catheter hooked to a subcutaneous reservoir (Port-a-Cath, Pharmacia). This catheter is a modified Tenckhoff catheter that is commonly used in peritoneal dialysis for renal failure. The subcutaneous reservoir can be accessed by inserting a needle through the skin into the reservoir. The use of this subcutaneous reservoir minimizes the risk of infection and increases patient acceptance because of better cosmesis. Initial experience with the Port-a-Cath intraperitoneal catheter with mitomycin C and mitoxantrone in standard doses (i.e., those used commonly for systemic treatment) have thus far led to a lack of systemic toxicity. Thus, using these standard doses which would normally cause moderate to severe myelosuppression, there has been no evidence of either severe myelotoxicity or other systemic side effects. Obviously, the purpose of this system is to increase the dose of any of these three agents as high as possible to enhance the possibility of intra-abdominal tumor cell kill.

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Medical and Legal Aspects of Child Abuse and Neglect in Arizona

Helen Britton, M.D.

Abstract

Child abuse and neglect is a medical problem whic
occurs in one to six percent of this nation's children. It i
one of the major causes of child morbidity and mortality
Physicians have a legal and ethical responsibility t
recognize abuse and neglect. State law mandates repor
ting of any suspected cases. Approximately one percen
of children in Arizona were reported as possible abus
cases in 1980. The physician must be aware of state law
regarding reporting of child abuse and should be able t
perform the appropriate medical evaluation for eac
type of abuse. Knowledge regarding Child Protectiv
Service involvement and frequent modes of treatmen
help the physician in his approach to the child and hi
family.

Key Words: Child, Abuse, Neglect

Child abuse is a major national and local problem
Various studies done in this country report the inci-

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ence of child abuse and neglect to be anywhere from ne to six percent of all children.[1,2] These statistics clude physical abuse and neglect, sexual abuse and motional maltreatment. In infants less than one year of ge born in this country, the rate of homicide is 5.6 per 00,000 live births, and the perpetrator of the injury sually is the parent or stepparent.[3] Victims of abuse vho are not killed, frequently develop long-term hysical and emotional handicaps. Obviously child buse and neglect is a major cause of childhood norbidity and mortality. In a society which provides creening of all infants for phenylketonuria (incidence /15,000), hypothyroidism (incidence 1/5,000) and rarer netabolic diseases, relatively little emphasis is placed on ecognition and prevention of the much more common roblem of child abuse. Abuse is both preventable and menable to treatment. In one study, the cost of injuries esulting from abuse was 80 times the estimated cost of a reventive program.[2]

In 1980 there were 7,597 reported cases of child abuse nd neglect in Arizona.[4] The state's population of hildren less than 18 in that same year was 791,487. leven percent of the reports came from the medical ommunity. Most cases reported in Arizona were those f neglect. The second most frequently reported cases vere physical abuse. Sexual abuse made up only ten ercent of reported cases; however, this problem is sually grossly under-reported because of the taboos hat surround its recognition. Because of the frequency f all types of abuse and the high rate of associated norbidity and mortality, the Arizona physician needs to e aware of his medical and legal role in the recognition, eporting and prevention of child abuse.

ecognition by History

The diagnosis of suspected abuse and neglect involves ecognition of a concerning history as well as the ability o identify physical and emotional signs of the problem. Historically there are three main components of an abusive situation: 1) potential for abuse in the caregiver;) a "special" child; 3) a stressful environment. People who abuse or neglect children have often had similar experiences in their childhood. They are frequently victims of low self-esteem and many infer that a child's crying or misbehavior is a direct reflection on themselves. There is often a history of physical violence, lack of impulse control, marital discord, or drug or alcohol misuse. In families where molestation and incest occur, there may be a reversal of roles where the abused female does many of the maternal household tasks. The child may be "special" by virtue of age, birth, sex or heritage. Babies who cry a lot, the handicapped, children in the "negative two's," and those with toilet training problems may be at high risk for physical abuse. Infants separated from parents for long periods after birth such as premature babies may also be at increased risk. An unwanted pregnancy, or pregnancy by a man mother dislikes frequently presents problems. The final component of abuse is a stressful environment. The caregiver often is isolated with few support systems. Stresses may be social, medical or financial. Abuse occurs in all socioeconomic groups.

Presenting complaints in children who have been abused are rarely straight forward. In physical abuse the child may present with "irritability" or vague parental concerns. The parent may have no explanation for a major injury. Sometimes the child presents with a physical illness, and bruises or fractures are incidentally found. Another presentation is unexplained coma or apnea, which would suggest poisoning or cerebral injury. Physical abuse should be suspected when the history of the injury is unlikely or is inconsistent with physical findings. Often the history of the injury will vary when the caretaker is interviewed by different parties or at different points in time. There is frequently a delay in seeking medical attention. The majority of abuse cases are not seen until at least 12 hours after the injury. Older children who are being mistreated may present with school problems, vague somatic complaints, suicidal gestures, or as runaways. Girls who have been sexually abused may come to the clinic for evaluation of dysuria, vaginal discharge or possible pregnancy. Unless questioned appropriately, a history of abuse may never be obtained. It is important to interview the child and parent independently whenever possible, since a child may be fearful to tell his story in front of his family.

Children who are found to be neglected or failing to thrive may be brought to the clinic by a concerned friend or neighbor. Often they are brought to a medical facility by a parent for an acute medical illness. The parent may deny a developmental or growth problem, and in some situations of poor weight gain may give a very exaggerated dietary history.

Physical Exam in Suspected Abuse

Physical abuse may include injuries such as bruises, burns, scars, lacerations, head trauma, fractures and poisoning; these may vary in severity from relatively minor injuries such as a bruise on the buttocks to major injuries causing fatal brain damage. The injury, irrespective of its severity, is a sign of lack of impulse control. Any bruise resulting from punishment in a normal healthy child indicates an unusual amount of force was used when punishment was inflicted. The first evidence of a stressed caretaker who has lost control may be a slap mark on their child's face, but in the next crisis situation the same caretaker may inflict severe head injury. Any fracture in a child under the age of two is suspicious for inflicted trauma. Young infants are especially vulnerable to physical abuse as indicated by the high homicide rate in this age group. By virtue of their immobility infants with fractures are usually not accident victims and are at severe risk for future death or disability unless social intervention occurs.

The physical examination is crucial in defining child abuse. Some characteristic bruises include handprints, bite marks, belt and whip marks, and choke marks. Inflicted burns include circular punched-out cigarette

Table 1
Medical Evaluation of Suspected Physical Maltreatment

History
1. Interview child and parent separately if child is old enough to talk.
2. Is the history consistent with child's age and the nature of the injury?
3. Obtain a detailed history; pay close attention to sequence of events.
4. Is the parent "high-risk" for abuse: isolated, abused as a child, low self-esteem?
5. Is the child "high-risk" for abuse: "difficult child," difficult development stage, premature infant?
6. Is there a crisis: financial, social?
7. Are there other children at home also at risk for abuse?
8. Is there alcohol or drug abuse in the family?

Physical Examination
1. Are there old and new injuries?
2. Is the injury consistent with the history?
3. Measure, draw and describe (location, color, induration, scarring) all lesions.
4. Is there evidence of old fractures: limited range of motion?

Laboratory Evaluation
1. Complete bleeding work up if multiple bruises.
2. Radiologic skeletal survey in children under age 5.
3. Photographs with consent of parent or CPS.

burns and large well-delineated burns from immersion in scalding water. Extensive radiator or iron burns are also characteristic. Subdural hematomas and intracerebral bleeds may result from aggressive shaking of an infant, and the child usually presents to an emergency room in an altered state of consciousness or seizing. External signs of abuse such as bruises or scars may be remarkably lacking in children with subdural hematomas. A very important part of the examination is making a detailed description of any injury. Specifically bruises, burns and lacerations need to be measured and described as to color, scarring and induration. An attempt to date injuries is also important. Dating of bruises by color has been published previously in the pediatric literature.[5]

Physical findings sometimes erroneously identified as abuse include birthmarks such as Mongolian spots, normal childhood bruises on bony prominences (the tibia and iliac crest), and dirty spots made by carbon paper and blue jean dye. Some cultural practices used as medical remedies such as coin rubbing and moxibustion also leave physical bruising and burns. Occasionally bleeding disorders are mistaken for non-accidental trauma.

In evaluating a child for sexual abuse a full physical examination should be done looking for signs of oral, rectal or vaginal trauma. The size of the vagina should be measured and compared to norms for age. A horizontal diameter greater than 4-5 mm in a prepubertal child is considered abnormal.[6] Any vaginal or rectal tears should be noted and drawn in the chart. Vaginal discharge should also be noted.

Failure to thrive may be the main physical sign o parental neglect. Failure to thrive in infancy is defined a paucity of subcutaneous tissue or inappropriate growt rate for age. Less than one-fourth of infants who fail to thrive have a medical illness. Infants with no medica reason for poor growth are identified as "nonorganic failure to thrive." These infants grow normally wher removed from their home and fed adequate calories Because nonorganic failure to thrive can be caused by simple feeding errors or financial problems, it is important to look for other signs of neglect on the physical examination. A developmental assessment can help point out deficiencies in social skills and language development that may result from lack of stimulation in the home. About one-fourth of these infants are physically abused as well and need to be examined closely for bruises, scars and fractures.

Laboratory Evaluation of Suspected Abuse

Laboratory studies indicated in suspected physical abuse cases include a bleeding screen and skeletal survey. Rarely a bleeding diathesis may mimic abuse but normal hematologic studies should eliminate this diagnosis. A full workup for bleeding disorders includes a complete blood count, platelet count, fibrinogen, factor XIII, partial thromboplastin time, prothrombin time, and bleeding time. A radiologic skeletal survey is most helpful in children under five years of age and may reveal abnormalities pathognomonic for child abuse. These abnormalities include multiple fractures in different stages of healing, twist fractures, and chip fractures of the metaphyses. Although the yield of

Table 2
Medical Evaluation of Suspected Sexual Maltreatment

History
1. Interview child and parent separately, if child can talk.
2. Does the child describe sexual events above his appropriate age level?
3. Specifically what sexual acts occurred: coitus, sodomy, fondling, digital penetration, fellatio, cunnilingus?
4. Exactly when did events occur, and who was the perpetrator?
5. Could the child be pregnant? By whom?
6. Is there a role reversal in this family?
7. Have other children in the family been molested?

Physical Examination
1. Are there injuries to the mouth?
2. Size of hymen, vaginal discharge? Tears, lacerations?
3. Laxity of rectum? Tears, lacerations?
4. Evidence of other physical maltreatment: bruises, scars?

Laboratory Evaluation
1. Culture of throat, rectum, vagina or urethra.
2. Smear for sperm if intercourse <96 hours prior to exam.
3. Syphilis serology.
4. Acid phosphatase evaluation of secretions if ejaculation occurred <24 hours.
5. Forensic evaluation if molestation or rape was <72 hours prior to exam.
6. Urine evaluation for urinary tract infection in selected cases.

adiologic evaluation is small, when findings are present hey are crucial in the diagnosis. Photographs of external njuries are also indicated. Consent from a parent or Child Protective Services is necessary before photographs are obtained.

Laboratory evaluation for sexual abuse includes hroat, vaginal and rectal cultures for gonorrhea in girls; nd throat, urethral and rectal cultures in boys. A blood est for syphilis serology should be done in any situation where genital contact may have taken place. If abuse has occurred with 96 hours of examination a smear for perm should be done: if less than 24 hours have passed n acid phosphatase test may also be helpful. In ddition, a forensic examination should be completed if ssault has occurred within 72 hours. This evaluation ncludes pubic hair, scalp hair, fingernail scrapings, blood samples, and sperm typing. The forensic material s given to the police department for evaluation. In adolescent females who have been sexually abused, the possibility of pregnancy needs to be considered. In all children, other venereal pathogens such as herpes, trichomonas, mycoplasma, and chlamydia should be remembered. A urine culture is in order if there is any suspicion of urinary tract infection.

Laboratory evaluation for failure to thrive and neglect nvolves looking for evidence of poor dietary practices as might be reflected in the complete blood count and also a minimal laboratory work-up for common organic causes of failure to thrive. Appropriate initial studies would include a complete blood count and a renal assessment including urinalysis. The most essential part of evaluating a child with failure to thrive is to observe if weight gain occurs on a regular diet for age in a controlled setting. Caloric intake must be measured and mother-child interaction should be observed.

Legal Aspects

State law mandates reporting immediately by telephone to Child Protective Services or police any *suspected* nonaccidental trauma, physical neglect, nonorganic failure to thrive, or sexual abuse of any minor (<18). Failure to report *immediately* is a Class 2 misdemeanor. The reporting physician is immune from civil or criminal liability. The initial telephone report needs to be followed by a written report completed the same day giving: a) names and addresses of child, parent, or persons having custody of child; b) child's birthdate; and c) brief description of injuries or neglect.

Any child suspected of being abused or neglected should remain in the clinic until Child Protective Services (CPS) or the police have been notified. Temporary custody (in order to retain a child against his parents' wishes) may *only* be obtained through Child Protective Services or the police. In a *true emergency* custody may occasionally be obtained by phone. It is important not to alarm parents or make them feel threatened since this may lead to conflict about the child leaving the health care setting. It is best to discuss the situation with Child Protective Services *before* confronting the parents.

Legally, there is no substitute for complete medical records including a detailed written history and good documentation of all physical and laboratory findings. When testifying, sometimes many months later, detailed records are critical.

Treatment and Follow-up

In the majority of reported child abuse cases in Arizona, families receive casework counseling, and in approximately 43% long-term support services are offered to families. Court action was taken in about 13% of cases in 1980, and only 5% of children were placed in foster care.

It is important to remember that the abusive family as well as the child is in need of help, and deserves immediate attention and good medical care. Hopefully future social trends will emphasize programs for prevention as well as recognition of abuse.

Child abuse is a symptom of a family in crisis. In all cases, therapy is most successful when initial anger and confrontation are minimal. When abuse is suspected, a multidisciplinary management approach is most effective. In some cases a social worker and physician may elect to conduct an initial interview together. Recognizing the perpetrator of the abuse should not be the first priority; the main goal is to identify abuse and protect the child pending further investigations of the situation and institution of therapy.

Table 3
Medical Evaluation of Suspected Neglect/Failure to Thrive

History

1. Lack of parental concern about physical illness, delayed development, or failure to thrive.
2. Bizarre dietary history? Feeding history?
3. Isolated or depressed parent?
4. Financial or social crisis?
5. Alcohol or drug abuse in parent?
6. Any evidence of organic failure to thrive?
7. Possible physical abuse?

Physical Examination

1. Lack of subcutaneous tissue.
2. Developmental delay.
3. Evidence of organic disease.
4. Signs of physical abuse.

Laboratory Evaluation

1. Complete blood count.
2. Renal assessment including electrolytes and urinalysis.
3. Does baby gain weight on adequate intake of a regular diet?

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Hospice Care Policy and Implications Contained in the Emerging Cost Control Incentives

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Dying is a physical process; it is a physiological process; it is a spiritual and a social process. The process of dying is part of the process of living. We should not deny it. American perspectives on death and dying seem to be strangely paradoxical. Our news media confront the fact of death directly with statements that range from magnificent headlines to unobtrusive notices on the obituary page. On the other hand, we Americans generally prefer to speak about particular deaths rather than death in the abstract. In our culture speaking about death and dying has been a taboo topic. It has been taboo because it has been hidden. We Americans are continually hesitant to talk openly about the process of dying itself. We see this fact often demonstrated by the physician who hesitates to be totally honest with a patient. Physicians in this culture are trained to cure. When cure becomes impossible, the typical physician's response is to leave the patient alone and report to the family that all that medical science can do has been done. One must understand that physicians, like the rest of us, are trained and tempted by success. Death to them represents a failure, and failures are difficult to accept.

In medical schools and hospitals, physicians and nurses may exhibit considerable skill in handling the medical mechanics of attending the dying but rarely do they address the patient as a total person. Physicians, nurses and other members of the medical support group also have trouble dealing with the dying. What the terminally ill patients need and want most, however, i basic relief from the dignity-degrading symptoms o their disease, continuous competent medical care, and assurance that they won't be abandoned by the medical/nursing staff and their own loved ones.

What is a Hospice Program?

Hospice is a medically directed multidisciplinary program providing skilled care of an appropriate nature for terminally ill patients and their families to live as fully as possible until they die. Hospice attempts to relieve symptoms of the distressing situation whether physical, psychological, spiritual, social or economic.

The Problem of Pain Control in the Terminally Ill

The hospice program has evolved in part as an attempt to compensate for the inadequacies of the present medical system, acute-care hospitals, and physicians in relieving the physical distress of the terminal patient. At present, we can only hope that the average terminal patient suffering from pain will find complete relief. Analgesic dosages are generally standardized and seldom calibrated to meet the patient's individual needs. Anxiety is provoked by anticipation of the cyclic return of pain and the inevitable consequence of inappropriate administration of drugs. Scheduling and apportioning of pain-relieving medications are seldom suited to the patient's requirements: the patient is often sentenced to pass through consecutive stages of sedation, uneasiness, and intense suffering. Narcotics prescribed to be given when needed are often withheld by members of the medical staff to avoid addiction; they

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seldom administered before the patient is in a state
acute distress. The results can be inadequate relief of
in and decreasing potential for the realization of
ojected goals of pain control (Jansen 1974).

The majority of physicians who care for the terminally
harbor fears of addiction, tolerance, and mental
pairment in their patients and consequently prescribe
rcotics on a four-hourly p.r.n. (pro re nata) or "as
eded/when necessary" basis. Under this system of
rcotic administration the patient must be in pain
fore he is able to receive the drug; if his therapeutic
gimen calls for pain killer every four hours and he
monstrates a need for pain-relieving medication
fore that time has elapsed, he is left to suffer out the
maining interval in pain. The preferred practice, in
ntrast, is to titrate the level of analgesic against the
egree of pain experienced by the patient, increasing
e dosage gradually until the pain is alleviated. The
bsequent dose is given before the effects of the
evious dose have subsided, and thus pain is kept in
eyance (Twycross 1974).

According to Mount (1976), there are several aims in
eating the intractable pain of advanced cancer.
larification of the cause of the pain is an essential first
m in symptom control and may suggest possible modes
therapeutic intervention. Awareness of the cause of
e pain and the existence of effective therapies for its
elief serve to remove the patient from the characteristic
ate of meaninglessness, helplessness, and hope-
ssness described by LeShan (1974). A second important
m is the anticipation and prevention of pain, as
pposed to treatment of pain once it has occurred. As
e anxious anticipation and memory of pain are
essened by repeated success at preventing pain, the
mount of analgesic required for the maintenance of
omfort frequently decreases (Mount 1976).

Another aim of the treatment of pain is achieving a
ain-free state without sedation. Many patients feel that
e only alternatives open to them are constant pain on
e one hand and perpetual somnolence on the other.
Comfort and an unclouded sensorium can be achieved
imultaneously, however, if careful individual regula-
ion of analgesic dosage is provided (Mount 1976). The
bility to relate to his environment in a normal manner,
either euphoric due to an excess of drugs nor
istressed due to inadequate medication, is a vital
atient need. Even the mode of administration should
e considered with the maximum benefit to the patient
n mind: oral analgesia provides the patient with a
egree of mobility and independence that is not
fforded by parenteral administration (Mount 1976).

There is convincing evidence that the Brompton
arcotic mixture, an oral narcotic preparation given with
phenothiazine, is an effective method for the control
f severe pain. The mixture is used when milder narcotic
nd nonnarcotic preparations prove ineffective; yet, in
pite of its potent analgesic effects, an anticipated
rotracted survival period is not a contraindication (Melzack 1973). With careful monitoring of the patient's needs and adjustment of dosage, the mixture may be used for many months and even several years without dose escalation.

In addition to the problem of pain, levels of anxiety and depression have been documented as the next most important variables to consider in rendering effective terminal care to patients and their families.

In a recently completed controlled study in which 38 hospice patients and primary care persons were matched in sex, primary site, and age, the following enlightening and encouraging results were found in the hospice patients in comparison with the nonhospice group:

a. lower levels of anxiety and depression as measured by the Zuckerman and Lubin and Sympton Checklist 90 Scales.

b. higher levels of social adjustment as measured by the Social Adjustment Self-Report Questionnaire.

c. lower levels of anxiety and depression as measured by the Zuckerman and Lubin and Sympton Checklist 90 Scales.

d. higher levels of social adjustment as measured by the Social Adjustment Self-Report Questionnaire.

These findings were found statistically significant at the .01 level. Primary care persons of both hospice and nonhospice origin experienced more friction with people around them than patients did from the respective study groups. Primary care persons were also, in general, more hostile and less anxious and depressed than patients. More significant differences were observed among primary care persons than among patients; hence, hospice services had a greater effect on primary care persons than on patients.

The emphasis of the hospice home care program is on the patient and family as the unit of care. Without a multidisciplinary team concept, the many hospice home care programs could not have succeeded.

It should be stated that there are some serious reservations about the future of hospice in America. Many developing hospice organizations throughout this country have become misdirected by what might be called the 'edifice complex,' the major goal being the erection of a fancy structure—a temple to the dying. This edifice complex must be cured. We do not need more acute- or chronic-care beds in this country. We need to use the existing facilities we have. We need to emphasize the importance of home care for the dying. We need to direct our care to the patient and family as the unit of care.

Cost Control Incentives

The continuing increase in the cost of providing health care services is well documented and, depending on the point of view adopted, close to astonishing. Since the institution of the Medicare Program in 1966, the percent of Gross National Product represented by health care services has increased from approximately six percent to ten percent. During this period medical services represented and continue to represent the fastest growing major category of the Consumer Price Index. The implications of this shift in national resources from other sectors of the economy to health care providers has been widely discussed but until recently the various proposals and incentives have been collectively unsuccessful in having a material impact on the continuing rise in the price of health care services.

While few would debate the human benefits to society from the advances in medical science achieved over the last two decades, the economic cost has grown to the point where the underlying society may no longer be willing to fund the medical industry at current expenditure levels. In short, the social tradeoff between expenditures on medical services and all other expenditures may have come far enough out of balance that the society's preference now favors a reduction in the resources directed to health care services.

For the first time meaningful initiatives are being undertaken to reduce health care costs. The Reagan Administration's budget for fiscal 1985 calls for freezing Medicare reimbursements to doctors for one year. Both the Texas Medical Association and California Medical Association have passed resolutions capping doctors' fees and reducing fees for some groups of patients. The American Medical Association has now adopted the proposal and from even casual observation of the popular press, the issue has received widespread attention. Few expect such initiatives to be isolated. Unfortunately, the focus of subproposals touches only a part of the problem. Charges for physician services represent only about nineteen percent of total medical charges.

In an environment where the resources available for treatment are becoming more tightly constrained, the basic financial economics of the medical industry are changed. Whenever the clinical aspects of treatment allow more than one set of procedures, the ideal course of treatment may need to be foregone in favor of a set of procedures that is optimum subject to a more binding budget constraint. Whatever the cost in human terms or the implications for the social welfare may be, the increased unwillingness to bear the financial costs of an ideal course of treatment for all persons is difficult to deny.

The challenge presented by these trends to providers of health care services is to make adjustments in treatment modality in such a manner as to provide an optimum level of delivery subject to the changing financial constraints that are now emerging. While this paper does not have a solution, some thoughts on the issues and their implications are offered.

Some Implications from the Financial Economics of Health Care

For a number of reasons the percent of Gross National Product represented by the medical industry has grown more rapidly than the economy itself. Some of the reasons have to do with the shift in the domestic economy from a manufacturing and agricultural base to a service oriented economy. Others have to do wi advances in medicine which allow providers access procedures and equipment that were previous unavailable. Unfortunately, these advances have tendency to be costly. Further programs such Medicare have made medical services more general available to a large segment of the population that m have been unable to afford the existing level of servi previously. A number of other reasons have bee identified, too.

An unfortunate aspect of these trends is th demographic forces are likely to continue increasing th need for medical services. It has been observed th approximately half of all medical services whe measured by the cost of the services provided a consumed by persons having less than two years to liv These persons tend to be the oldest segment of th population. This aspect of the problem is the same that faced by the Social Security program in general: the population grows older there are more persons i the age brackets receiving Social Security pensions an requiring higher levels of medical services but fewe persons as a percent of the total population in the ag group that contributes to the program. In one sens some of the financial pressures facing the medic industry are the direct result of its success in providin services.

In the decade from 1973 to 1983, the health care cos portion of the Consumer Price Index increased by 156. percent while the Composite Consumer Price Inde rose 124 percent. Closer examination reveals that not a subindexes of the health care component grew equally Some such as prescription drugs grew at a rat substantially below the Consumer Price Index. For th period given here, physicians' fees increased 148. percent but the cost of a hospital room grew some 233. percent.

Of the items that are subject to control, physicians fees may be one that is subject to more effective an immediate pressure than almost any other majo component of the medical industry. The economi system has transformed the supply of providers o physician services from a period of apparent shortage n more than a decade ago to a position of apparen surplus. Even casual examination of the rate of entry int the industry from domestic medical schools and the importation of foreign trained physicians, the forecas can only be for increases in the number of practicing physicians exceeding the growth in demand for these services at the levels of income currently reported fo physicians. As significant decreases in the number o persons willing to provide physician services is unlikely, pressure to constrain or lower physicians' fees can be expected.

Examination of total medical expenses, however, reveals that physicians' fees are a relatively small proportion of the total. Persons nearing the end of their life either due to aging or as the victims of disease or serious accident consume the greatest amount of the ealth care dollar. The largest category of expenses is for ospital services; particularly, the cost of the hospital oom. The simple financial economics of the problem uggest that if material control or even deduction in real xpenditures is to be achieved, the consumption of ospital services must be addressed.

Despite some abuses, most persons receiving hospital ervices are in need of these services. At the same time nany of these persons are suffering from chronic illness nd are near the end of their lives despite all that medical cience can now provide. At some point in the value of ontinued treatment ceases to have medical or human alue. Hospice care has emerged as one of the more umane aspects of current medical practice. In an nvironment where financial pressures are increasing, here is merit in reexamining the point at which hospice are becomes more appropriate than continued ospital care.

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Stress and the Role of the Family in Psychosomatic Illness

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Abstract

The primary care physician commonly treats, and is often frustrated by, the psychosomatic patient and the somatizing family. This paper reviews the role of stress, dysfunctional marriage, overinvolved or rejecting parenting, family dynamics and the family tradition of being sick in perpetuating psychosomatic illness within the family system. Initial evaluation/intervention approaches are outlined.

Within the past few decades, interest in the etiology and pathology of human illness has expanded from the traditional, purely biologic approach into one which stresses multiple aspects of the patient's ecology as determinants of illness. In particular, the interrelationship between emotional and physical aspects of disease has been explored.[1] This "psychosomatic approach" to patient care is predicated on the hypothesis, based on observation, that social and psychological factors play a role in the predisposition, inception, and maintenance of many diseases.[2] Clinical experience often validates this association so that the practicing physician is increasingly concerned with the patient's adaptation to stressful life events and with the psychologic factors which may interfere with a prosperous adaptation.

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The Role of Stress in the Etiology of Psychophysiologic Illness

Stress has been defined as the nonspecific response of the body to any demand.[3] Selye termed these physiologic changes in response to stress the "general adaptation syndrome" (G.A.S.). Three stages of the G. A. S. are described: 1) the alarm reaction; 2) the stage of resistance; and 3) the stage of exhaustion. Activation of the alarm reaction is produced by novelty, threat, conflict, and homeostatic imbalance. During this stage, the body is mobilized to react to imminent danger. Epinephrine and adrenal cortical hormones are secreted, producing an uncomfortable hypervigilant state in which the individual becomes motivated to find a solution to the dangerous situation. The alarm reaction may be seen as an adaptive response to dangerous noxious stimuli which threaten the integrity of the individual.[3] However, sustained activation of the alarm reaction may be associated with considerable pathology[4] and even death.[3] For example, depression may be related to "learned helplessness," a condition which occurs in response to strong and unavoidable shocks in animals.[5] Mental disorders, such as schizophrenia and manic-depressive illness, may be associated with sustained activation, which may alter the biochemical composition of the brain itself to produce maladaptive behavior.[6]

The second stage, the stage of resistance, is characterized by decreased activation of physiological processes associated with the alarm reaction, even if objectively the situation remains unchanged. In this phase, the individual begins to adapt or actively cope with the threatening situation.[4] Humans may meet threats by dampening or diminishing their perception of of threat.[7] This decreases the person's anxiety at the price of a less accurate perception of the situation. In crucial situations, this may prove fatal.[8]

Continued exposure to noxious or threatening stimuli leads to the third stage—the stage of exhaustion. In this stage, the striving to adapt is eventually lost, and collapse of physiological and psychological defense mechanisms ensues. Debilitating illness and even death characterize this final stage.[3] This, the stage of defeat, seems related to endorphin release in animals[9] and probably in humans as well.[10]

There is considerable evidence that intrafamilial stressors may induce the physiologic changes characteristic of the general adaptation syndrome outlined above.[11] The family either may contribute to or substantially diminish the impact of stress on the individual. Indeed, intimacy and security in relationships appear crucial to normal human health and development. Since the family is the universal institution where basic relationships exist, the intrafamilial environment must be explored to better understand symptoms that may result from, or be exacerbated by, disturbed family relationships.[12] The remainder of this paper will investigate family dynamics which have been shown to be important in the etiology of physical illness and will describe some approaches to the psychosomatic patien who presents in the office of the primary care physician

Reactions of the Family to Stress

Many psychosomatic disorders are a response to familial stress.[1] Families of individuals with psychosomatic symptoms are generally ineffective in dealing with either external or internal stress. Various studies have reported a correlation between familial stress and such psychosomatic disorders as myocardial infarction,[12] ulcerative colitis,[13] obesity, acne, gastrointestinal disorders,[14] infantile colic, and recurrent abdominal pain.[15]

Ineffectual coping with stress is often seen in families in which there is poor alignment between husband and wife, where neither supports the other in the solution of family problems.[1] In these families, small stresses are perceived as intolerable, producing high levels of anxiety and tension within the family unit. Environmental stresses such as loss of a job often lead to disruption or disequilibrium within the family system, adding a further source of psychological stress. Finch and Hansen[15] note that a vicious cycle may be set into motion within families with few coping skills. Families with children affected by infantile colic were studied, and it was noted that the child's illness created an extreme life stress in these susceptible families. As parental anxiety mounted, the infantile colic worsened, thus setting into motion a vicious cycle of events. Child abuse was a frequent consequence of this cycle in families with a multigenerational history of abuse or neglect.

Dysfunctional Marital Interactions

Mainprice[16] characterizes marriage as a second chance to heal the past and enable new growth. Often a person chooses a partner with a similar disturbance which began in the same phase of emotional development. These individuals may develop a trusting, caring relationship which enables them to work through their shared emotional disturbance, thus fostering further growth. However, in many marriages this does not happen, and the partners remain distant from each other or locked in unresolvable conflict. Each partner is emotionally unavailable to the other. Left in a state of frustration and tension that offers little hope for satisfaction and fulfillment through their marriage, the couple drifts further apart. Each partner may seek outside involvement to reduce tension as with compulsive athleticism, slavish devotion to work, or a series of extramarital affairs. A mother may become excessively involved in her role, withdrawing from her husband and clinging to her child in a mutually dependent relationship.

Dysfunctional Parenting

The parents of children with psychosomatic illnesses are characterized as overcontrolled, as lacking warmth and as discouraging the expression of feelings within the family. Mothers are described as overprotective, domineering and rejecting while the fathers are passive and uninvolved with family life.[1] In particular, a pathological mother-child relationship is thought to predispose to physical illness.[2] This psychosomatic ationship originates during the preschool years and y remain active throughout life. It is a symbiotic ationship which is determined, on the mother's side, her need to keep the child in a continuous state of pendency. The child is rewarded by his mother for ng sick—that is, for remaining helpless and pendent, and is rejected when he is healthy—that is, en he evidences overt aggression and strivings for ependence. The child's illness thus enables the ther to receive attention through the child's problem ile she remains powerful and in control.[17]

n an effort to gain nurturance and protect against ndonment by his mother, the child adopts a pendent, sick role manifested by a variety of physical ladies. Internalization of the state of being sick may e development as the child is unable to form a arate and unique identity of his own. Full devel- ment is preempted, and chronic illness becomes a y of life.[18] Emotionally based asthma is thought to cur in children who are locked in a dependent and nstricting relationship with the mother. The attack is cipitated by an actual or imagined threat of paration which neither individual can tolerate.

nother disturbance in the context of parent-child eraction is parental rejection. This has been ticularly well-documented in children with infantile nination syndrome. These children voluntarily urgitate large amounts of food after feeding and the of rumination provides a type of stimulation and tification that is lacking in the mother-child ationship. Parental rejection, sometimes accom- nied by overprotection, has also been described as a mmon concomitant of asthma and juvenile rheu- toid arthritis.[1,13]

nily Dynamics

Minuchin and his colleagues[19] characterize psycho- matic families as overprotective, enmeshing, unable resolve conflicts and as involving the child in parental putes. Children are sheltered from external stresses d anxiety provoking situations. This environment les the child, preventing the development of a sense independence, autonomy, or mastery over external ents.

Enmeshment is defined by Minuchin as "an extreme m of proximity and intensity in family interaction." meshed family members tend toward overidenti- ation with the family unit, resulting in incomplete dividuation and poor interpersonal differentiation. ch family member lacks a sense of unique personal entity.

Lack of conflict resolution further characterizes the ychosomatic family. Conflict is denied or diffused in ese families. Problems are typically left unresolved, d arise repeatedly to threaten familial homeostasis. ese families also may involve the child in parental nflicts. The child may act as intermediary caught tween his two parents, he may be in coalition with one rent against the other, or he may be a detour circuit rough which conflicts can be expressed. This helps to maintain familial homeostasis, but does so at the cost of reinforcing the child's psychosomatic symptom and the dysfunctional family organization.

A child raised in a family utilizing these dysfunctional coping techniques develops little awareness of his or her emotional needs, lacks autonomy and self confidence, is limited in his or her coping skills, and is unable to utilize relationships with others to satisfy basic needs. Defensive behaviors designed to reduce tension emerge. These often include social withdrawal, excessive dependence on family, or compulsive adherence to school work. When overwhelmed, the child may have no alternative other than to express his emotions through psychosomatic symptoms.

Generational Patterns

When a child presents with a psychosomatic illness, one of the parents commonly has suffered from a similar illness. The parents may find comfort in viewing the illness as physically inherited and out of their control. However, the child's illness also may revive unresolved memories and conflicts in the previously afflicted parent. The parent may react to these feelings by becoming overly solicitous or overly punitive toward the child. Modeling may be a potent facilitator of psychosomatic symptoms. Parents who suffer from unrealistic anxiety about their health and who tend to adopt the sick role, facilitate psychosomatic complaints in their children as a means of coping with environmental stress.[14]

Chronic psychosomatic disorders are usually found in families where family dysfunction has been manifest in three or more generations.[1] Inflexibility, extreme restriction of emotional expression, hostility in relationships between family members, and parental psychopathology are prominent characteristics. However, more acute psychosomatic symptoms may be displayed in less rigid families when familial stresses are overwhelming.

Intervention

The primary care physician faced with a family entrenched in psychosomatic illness must feel overwhelmed and frustrated at the magnitude of the task. Yet, in spite of tightly interlocked pathology which has existed for generations, some members of the family often seem capable of individuating from the system while others are sufficiently uncomfortable with the situation to work with the physician in addressing the pathology.

The primary care physician may or may not wish to undertake extensive family therapy. However, a thorough evaluation of emotional as well as physical factors is often quite therapeutic and can constitute a first step toward a considered referral. The following steps may be helpful:

1. As the family system is the most effective force to diminish (or augment) stress, all family members need to be involved in the evaluation. Those less enmeshed, and therefore perhaps healthier, are less likely to be present but if invited, may become valuable allies. A flexible

model in which the physician can meet with the entire family, individual members, or dyadic combinations is most suitable.

2. Define and describe emotional as well as physical factors, indicating that the problem is real and serious. Indicate that stress augments most, if not all, disease processes.

3. In describing relationships within the family, emphasize the positive aspects: family members are concerned and involved with one another. They do care.

4. Foster healthy individuation through empathy: the parent who is overly controlling may also feel the weight of responsibility and loneliness; the uninvolved parent often feels unimportant and impotent; the child who basks in parental concern may long to be like other youngsters who play baseball.

The physician's continued involvement, whether formally designated as psychotherapy or not, will necessarily focus upon healthy and growth-promoting aspects of the family system. An understanding of common psychodynamic denominators can enable the primary care physician to address the complex emotional and physical interrelationships within the psychosomatic family.

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Clinical Practice Roles for the Doctor in Developing Countries

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Abstract

Practicing near a border with the Third World in a stat with no net doctor shortage, Arizona physicians are in position to consider short or long-term work in a de veloping country. Whatever their specialty, those wh do will find their clinical role in such countries enlarge to include paramedical teaching, practical research, an clinical consultation.

In the "consultant" role, clinical decisions ar conditioned by the potential therapies' technologi availability, economic and geographic accessibility, an cultural acceptability. To illustrate these principles, w present six case synopses of uncommon but cosmo politan diseases and one (enteritis necroticans) which i common only in isolated geographic foci.

As organized medicine and individual physician reclaim their international service role, a specifi orientation toward optimizing clinical outcome wit limited resources is needed. Continuing educatio courses at the University of Arizona can provide tha orientation.

Key Words: Medical Diagnosis; International Health; Medical Practice

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roduction

Many American physicians consider a period of dical work in developing countries. With no shortage doctors now in the United States, more may explore s option. What changes in their clinical role await ose who go? At least three profoundly enlarged roles l be thrust upon such a physician. All three are nditioned by resource limitations. Teaching para- dical workers and managing the resulting health care m is the first priority for the one doctor available per 000 to 100,000 people.[1] These doctors' experiences[2] nfirm the conclusion of the World Health ganization that 80% to 90% of Third World health care oblems can be cared for by such paramedical workers.

Practical research becomes the second role, as the ctor helps the community analyze its health care eds. Whenever any disease problem, common or e, inordinately consumes scarce resources, the ctor must undertake or promote the research for turally acceptable, cost-effective new technologies.

Finally, since paramedicals refer 10% to 20% of their ients to the doctor, he or she will have a major role in nical care. Those based in hospitals will be expected area citizens to have surgical skills;[4,5] in fact, the lume of popular demand for surgery frequently tracts from the teaching and team management es.[6] In the same population of perhaps 100,000 will be wide variety of relatively complex nonsurgical prob- ns as well. Whatever the doctor's previous clinical perience or specialty training, he or she will be placed o a "consultant" role in all these cases.

n developing countries this "consultant" role goes yond its obvious clinical fascination and challenge. cause of resource scarcity, there is an additional ndate to pursue diagnostic possibilities in the light —and perhaps only in the light of—three criteria for y potential therapy. Is effective therapy: a) *available* chnologically; b) *accessible*, in cost to the government d convenience to the patient; and c) *acceptable* lturally?

These three criteria will be illustrated by synopses of cases (Table) referred by paramedicals to the author the two-doctor Enga Provincial Hospital in the ountainous Highlands of Papua New Guinea. Influ- ced by the outside world only in the past 35 years, the estyle of the 180,000 Enga people is conducive to the ectious and nutrition problems typical of the Third orld, but protects them from many chronic "Western" seases, especially hypertension, arteriosclerosis and abetes.[7] This Melanesian nation's 3.1 million citizens e served by a four-level health care system (1500 village d posts, 250 health centers, 20 provincial hospitals, 4 gional referral hospitals), which is an exemplary ototype of those now promoted by the World Health rganization in its other member nations. These untries also have typical per capita annual health dgets of $10 or less. The 200 doctors, most of whom e expatriates, are based at the hospital levels, where eumonia and chronic lung disease are the leading causes of admission and mortality.[8]

Table
Criteria for the Evaluation of
Therapies in Six Cited Cases

	Criterion		
Case	**Available in Technology**	**Accessible in Cost and Convenience**	**Acceptable in Culture**
1. M/6: Thalassemia	no	no	no
2. M/25: Diabetes Insipidus	yes	*±	yes
3. M/28: Acromegaly	yes	yes	no
Operable heart disease (4 & 5):	yes	yes	yes
4. M/5: Patent Ductus Arteriosis			
5. F/25: "Pure" Mitral Stenosis			
6. M/5: Enteritis Necroticans	*±	no	yes

*± = suboptimal

Case Synopses

Case 1: A six-year-old boy was referred from an isolated health center, accessible only by a three-days' walk. Complaining of weakness, he had been treated with iron for his obvious anemia and presumptively with chloroquine for malaria. Sickle cell disease is not seen in this country. A sibling had died with a similar clinical

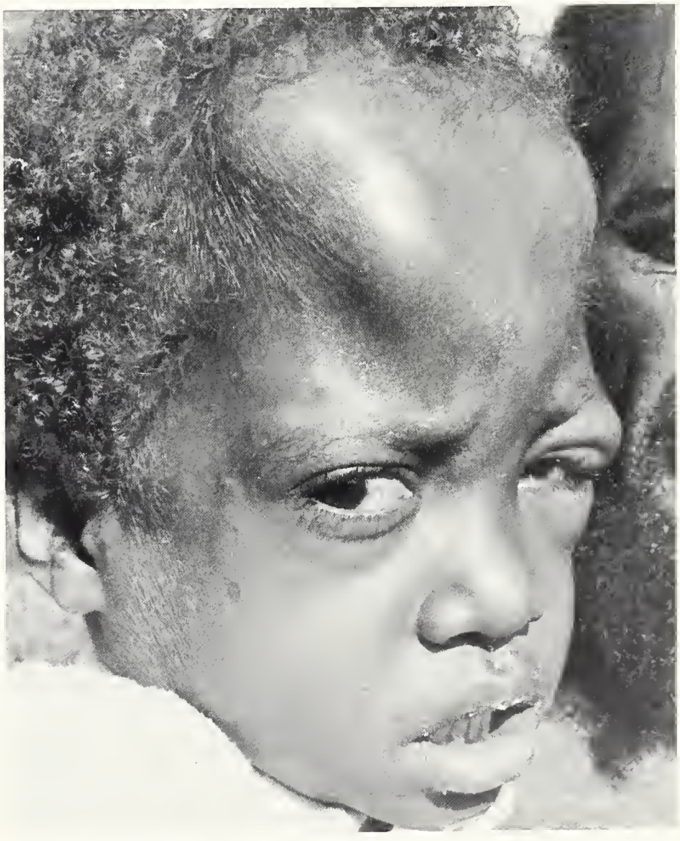

Figure 1a
Case 1, M/6, with apparent thalassemia

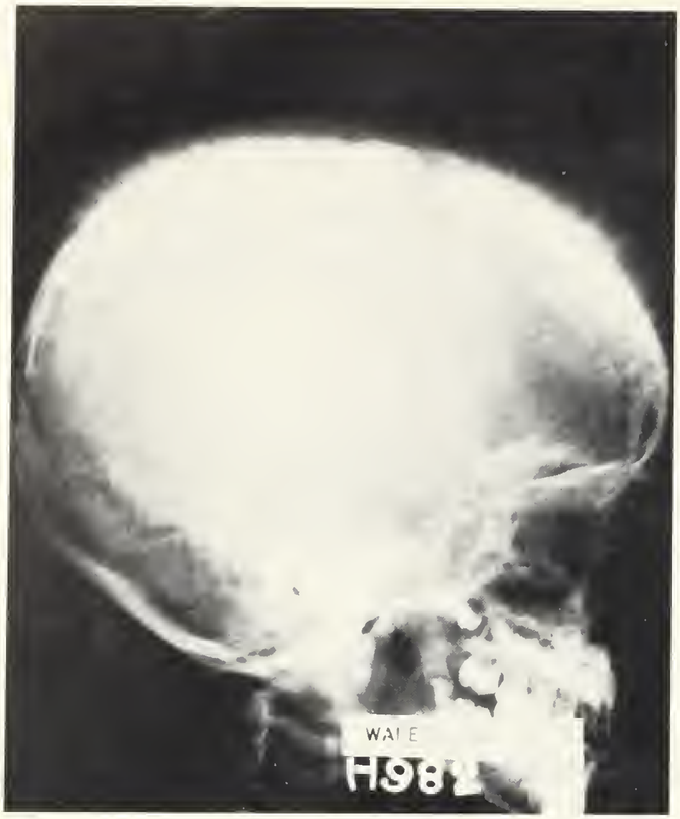

Figure 1b
Case 1, M/6, with apparent thalassemia. In radiograph note typical "hair-on-end" appearance and the metal marker placed on parietal scalp over the paper-thin outer table (extreme top of radiograph).

picture. The child was pale, and had an enlarged liver, spleen, and cranium, with a spongy outer table and frontal bossing (Figure 1). Hb was 3.4 g/dl. Blood film showed hypochromic microcytosis, nucleated red and target cells. Blood sent to the laboratory in the capital city was reported as "majority hemoglobin F."

Since there is no specific therapy available for thalassemia, one is left with few options anywhere in the world. The hospital's distance and strong cultural ties to the clan homelands mitigated against repeated family journeys for transfusion. Family limitation was out of the question for the monogamous parents in a culture aspiring to six children as the ideal family. The medical staff discontinued iron and sent the child home on weekly folate and chloroquine, learning from the family a dimension of care more profound than clinical cure. The nonavailability of detailed hematology studies or antenatal diagnosis was not a practical disadvantage.

Case 2: A 25-year-old Enga man had polydipsia for six months, daily passing 6 liters of 1.004 specific gravity urine which had no other abnormalities. There was no pertinent family or past history, other than a 5-day episode of headaches and fever five years prior. Physical examination, including visual fields, and skull radiographs were normal. Serum chemistry tests (available on special request) showed: Na+ 144 Meq/L, K+ 3.7 Meq/L, glucose 95 mg/dl, urea 10 mg/dl (normal: 25 - 40). Serum calcium (9.3/mg/dl) and inorganic phos. (3.7 mg were normal when sent to the capital city laborato

Diabetes insipidus was confirmed by the w deprivation test, in which the patient lost eight perc of body weight, with the serum sodium rising to 149, the urine sp. gr. to no more than 1.008. Pitre (available a month later after special order) ruled nephrogenic diabetes insipidus by raising the urine gr. to 1.017. The cost, inconvenience, and unrelia supplies of regular injections of pitressin in oil, or es cially of DDAVP (desaminocys-D-arginine vasopres dictated the choice of 50 mg. oral hydrochlorothiaz daily (costing 70 cents a year) as an ameliorant. Ur volume fell to 2 to 3 liters/day, which was acceptabl the patient, obviating the need to procure chlorp pamide. Though not theoretically optimal, these sa considerations may dictate thiazides as a treatment choice even where pitressin is readily available.

Case 3: A 28-year-old Enga man complained weakness despite increasing body mass during the pr few years (Figure 2). He did not complain of joint pa however, complaints of pain by Enga males are ra Sweating was considerable but likewise difficult

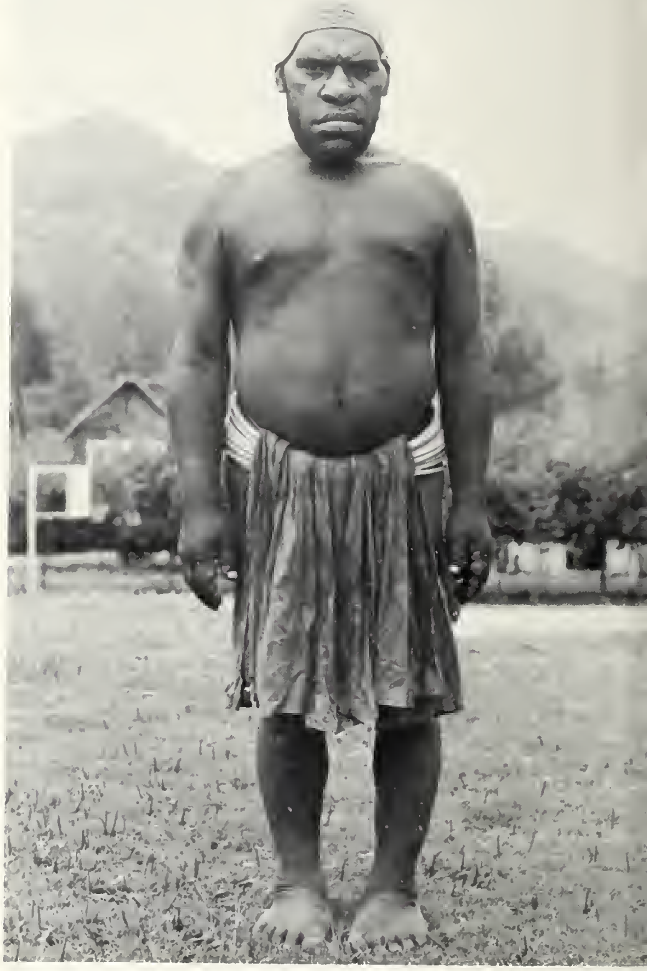

Figure 2
Case 3, M/28, acromegaly

aluate in the warm climate. He was not married, a ity in his culture. Cultural sensitivities precluded rther history regarding his libido or examination of the tes. Examination did confirm his large but non-obese ass (88.1 kg.; height 165 cm) and typical acromegalic atures (Figure 3). He had no visual field deficit,

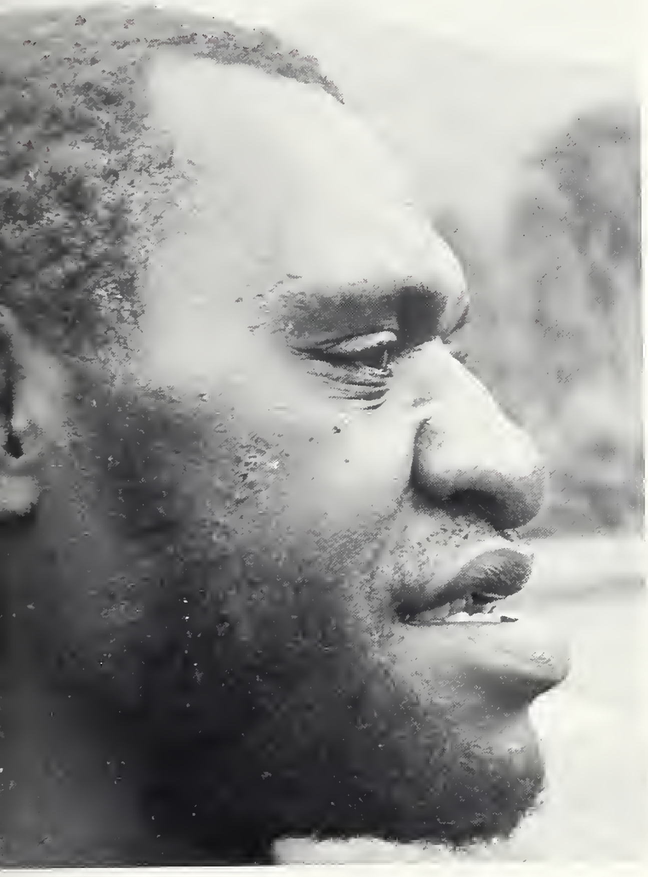

Figure 3a
ase 3, M/28, acromegaly. Note enlarged mandible, inion, and ella.

iplopia, cardiac abnormalities or obvious stigmata of ypothyroidism. On radiograph, the sella measured 14 x) mm; the clinoids were nearly destroyed. While ontinued clinical activity of the tumor was difficult to rove in this setting, his relatively young age and recent nset made it likely.

There were no neurosurgeons in the country. Long-erm daily bromocriptine was unavailable and imprac-cal. Conventional radiotherapy is available in Lae, 400 niles east. However, it had taken maximal courage for ne patient to leave his home area; to travel half-way cross his country of 700 languages to receive mysterious ays from an unknown machine to destroy an invisible rowth in the center of his head was entirely unthink-ble. Respectfully declining, he headed homeward over ne mountains. While patients have access to optimum reatment in the national radiotherapy unit, it was cul-urally (and conceptually) unacceptable to this patient.

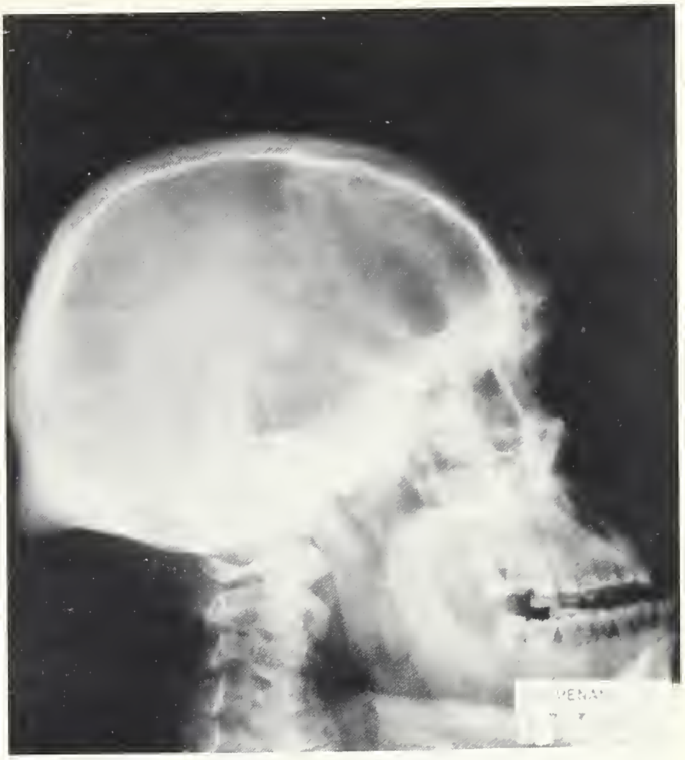

Figure 3b
Case 3, M/28, acromegaly

Case *4:* A five-year-old boy, having transiently lost consciousness during vigorous play, was brought to the hospital by his parents. Despite his regular attendance at the nurses' itinerant "under fives" (maternal-child health) clinics, there were no previous health complaints. His growth curves for height and weight were average among his peers. On examination, his pulse was 122 at rest, with normal respiration. Blood pressures were: left arm, 96/36; right arm, 98/50; right popliteal 114/40. There was no cyanosis, clubbing, or elevation of neck veins. There was a thrill localized to the pulmonic and left infra-clavicular area, where an increased pulmonic second sound was heard at the peak of a continuous murmur. His electrocardiogram was normal. The chest radiograph showed a cardiothoracic ratio of 10:17 cm with left ventricular predominance and slight increase in lung vasculature. The patient was referred with a diagnosis of patent ductus arteriosus, the only common congenital heart disease correctable in this country, which lacks echocardiogram, cardiac catheterization, and open-heart surgical facilities. Two Enga nursing students accompanied the family 180 miles to the regional referral hospital, where the ductus was successfully ligated.

Case *5:* A 25-year-old mother of three denied prior symptoms, other than a chronic cough, when carried to the hospital with left hemiparesis. Examination also revealed a loud first heart sound in the mitral area and increased second pulmonic sound with exaggerated splitting. Following full recovery from the transient hemiparesis, a faint low-pitched, diastolic murmur could be heard at the apex after exercise. There was no

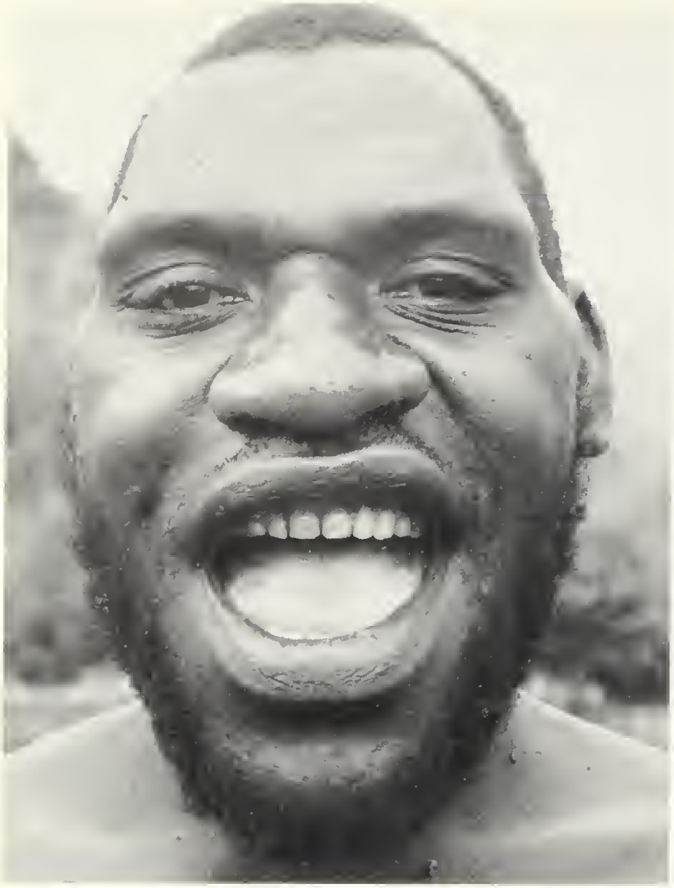

Figure 3c
Case 3, M/28, acromegaly

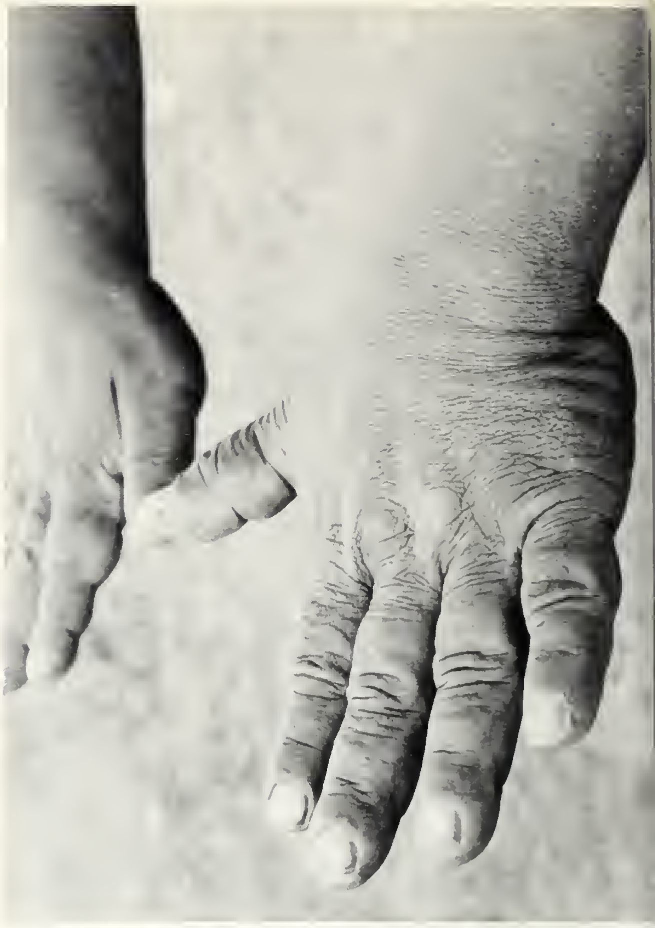

Figure 3d
Case 3, M/28, acromegaly

evidence of bacterial endocarditis. The chest x-ray and electrocardiogram were classic for mitral stenosis (without insufficiency). She was anticoagulated and later referred to the same surgeon for the only other cardiac surgical procedure available in the country, closed mitral commisurotomy.

Since coronary and hypertensive heart disease are absent,[7] rheumatic valvular disease and congenital heart disease are the most common categories of heart disease in the local population. Cases 4 and 5, examples of the only two cardiac diseases definitively treatable by surgery in Papua New Guinea, were among many others, who were judged by these basic clinical methods to have lesions not correctable in the country. Careful clinical diagnosis at the provincial level selects those who can be operated, while avoiding the expense and loss of community confidence in the referral process that would follow misdiagnosis.

Case 6: Another 5-year-old boy had three days of vomiting and constipation following initial diarrhea after a pig meat feast. When conservative (suction and antibiotic) treatment failed to relieve the small bowel obstruction (Figure 4), this typical case of enteritis necroticans ("pig bel")[9] required surgical resection.

One of 15 to 20 such operative "pig bel" cases at this provincial hospital in a typical year, this boy's disease was typical of many who required resection and anastomosis, often resulting in chronic malnutrition. Enteritis necroticans is the leading cause of death in Highlanders between the ages of five and fourteen. Treatment of even a few cases in the hospital required major commitments of scarce supplies and of doctors and nurses' time. Though surgery is acceptable, and often strongly requested by the community, clearly it i not the optimum solution technologically nor in cost effectiveness. In other developing countries, othe diseases claim a similar frustrating importance. In such situations, the medical profession's emphasis must be on its research role, which led to the recent development o the "pig bel" Clostridial vaccine.[9]

Discussion

A problem-based approach to diagnosis is as appropriate for doctors as it is for paramedicals in developing countries.[10] Given a presenting clinical problem, the doctor must know not only which diseases in the differential diagnosis are treatable in the optimum situation, but also which are amenable to therapies available within the country's economic, geographic and cultural constraints. Diagnoses for which therapies are not available, accessible and acceptable locally should not be routinely pursued in the "triage" economy of daily clinical practice.

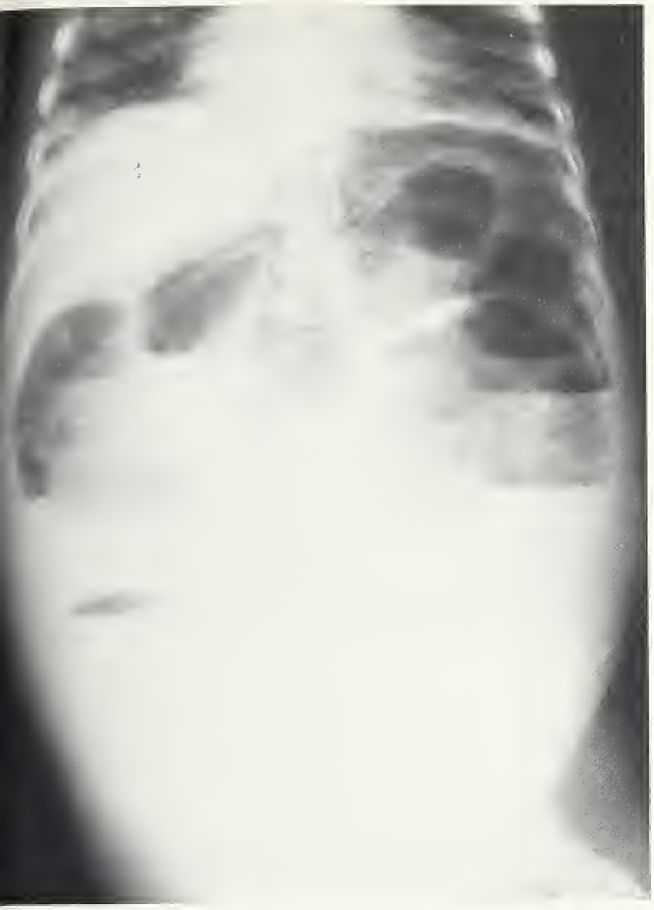

Figure 4
ase 6, M/5, enteritis necroticans (i.e., “pig bel”). Supine diograph of typical small bowel obstruction on Day 5.

Where one has the luxury of a therapeutic choice etween a short-term (usually surgical) procedure and ng-term (usually medical) treatment, the short-term tervention is usually preferable, even if its expense is omewhat greater. Chronic medical treatment, even hen available, is frequently inaccessible due to interuptions of medical supplies, clinicians' posting and atients' transportation. And long-term treatment may ot yet be acceptable in cultures now accustomed to /estern medicine's dramatic cure of acute infectious isease, trauma and obstetric emergencies.

The doctor's diagnostic priorities are thus set by areful considerations of culture and of scarce therapeutic resources. Yet ultimately, this entire clinical role is only part of one's overall community responsibility for practical research, teaching and team management. Third World experience in these roles would benefit American physicians,[11] especially those in cross-cultural Arizona settings.

As organized American medicine encourages its physicians to explore their international service role,[12] Arizona physicians are ideally situated to respond through several nationally known volunteer organizations, including Esperanca,[13] based in Phoenix. International health curricula at the University of Arizona College of Medicine,[14] now directed at medical students and residents, could be adapted to the continuing medical education format to orient Arizona doctors ready to expand their roles internationally.

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Cerebellar Infarction from Chiropractic Neck Manipulation:

Case Report and Review of the Literature

Steven M. Zak, M.D.[1]
Raymond F. Carmody, M.D.[2]

Introduction

Acute cerebellar infarction with progressive deterioration and death was first reported in 1938.[1] However, it was not recognized until 1956 that acute cerebellar infarction can present as a posterior fossa mass lesion with acute obstructive hydrocephalus.[2,3] With heightened clinical awareness and the introduction of computed tomographic (CT) scanning this syndrome has been observed with increasing frequency. Chiropractic neck manipulation has been stated to be the most common causative factor in cases of cerebellar infarction from traumatic vertebral artery occlusion.[4] We recently treated a 53-year-old man with acute cerebellar infarction and obstructive hydrocephalus due to chiropractic cervical manipulation. Steroids, diuretics and external ventricular drainage were unsuccessful in preventing a fatal outcome. A review of the literature is presented and various features and treatment alternatives of acute cerebellar infarction are discussed.

Key Words: Cerebellar infarction, Cerebellum, Chiropractic cervical manipulation, Hydrocephalus, Vertebral artery, Vertebrobasilar infarction.

Case Report

A 53-year-old white man was admitted to the Tucs Veteran's Administration Medical Center (VAMC) coma. He had previously been in excellent health exce for chronic neck pain for which he had chiropract cervical manipulations. Ten days prior to admission, had an episode of vertigo and nausea which resolv over a few hours. Over the next week, he experienc generalized malaise. Two days prior to admission, had the sudden onset of vertigo, nausea, and vomitin He subsequently underwent chiropractic neck manip lations that afternoon and the following mornin without improvement of his symptoms. On the evenin before admission, he had persistent nausea and a seve posterior headache. He was admitted to his loc hospital early the following morning at which time was lethargic but fully responsive with no lateralizin neurologic signs. Two hours later, he was noted to stuporous with a left gaze palsy and bilateral Babins responses. Over the next four hours, be becam comatose and quadriplegic. The patient was started dexamethasone 4 mg intravenously (IV) every six hou and air evacuated to Tucson the following morning.

Vital signs on admission were: temperature 101.0° F blood pressure 170/108; pulse 128; and respiratory ra of 30. On general physical examination coarse bibasil rales were heard over both lung fields. Neurologic examination disclosed an unarousable patient wh exhibited weak, decerebrate posturing bilaterally deep pain. The right pupil was 5 mm, the left pupil was mm, both sluggishly reactive to light. Funduscop examination revealed a flame hemorrhage in the le retina but no papilledema. Weak corneal response were present bilaterally, right greater than left. Doll eye responses and the gag reflex were both absent. Col water calorics in the right ear produced abduction of th right eye with the left eye stationary, and in the left e produced slight adduction of the right eye with the le eye stationary. Motor examination showed flacci quadriplegia. Deep tendon reflexes were abse throughout. Bilateral Babinski responses were presen

Laboratory evaluation documented a white bloo count of 19,400/mm,^{3} a hemoglobin of 17.6 g/100 m and a platelet count of 321,000/mm.^{3} Clotting studie were normal. Serum electrolytes and renal functio studies were unremarkable.

The patient was intubated, hyperventilated, and give dexamethasone 60 mg IV, furosemide 60 mg IV an penicillin G 2 million units IV. An emergency CT hea scan showed an extensive left cerebellar infarct wit edema, and hydrocephalus of the third and latera ventricles. (Figure 1). Later that day a ventriculostom catheter was inserted into the right lateral ventricle. Th opening cerebrospinal fluid pressure was 160 mm H_2O The patient was continued on dexamethasone 60 mg daily, furosemide 60 mg IV every 12 hours, and penicilli G 2 million units IV every 4 hours.

On the second hospital day, the patient remaine comatose with a flaccid quadriplegia. Pupils remaine

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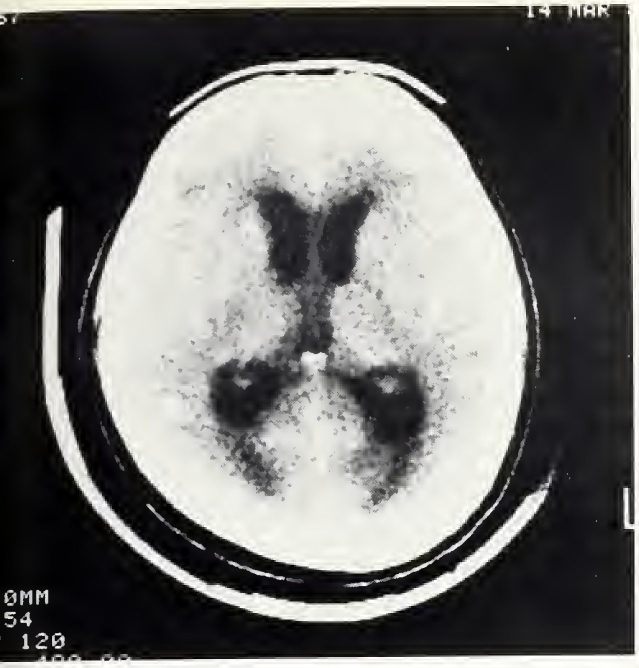


Figure 1a
nenhanced CT head scan, day of admission. Large area of low ensity is seen in left cerebellar hemisphere. The fourth entricle (arrow) is nearly obliterated and is displaced nteriorly and to the right.

active, but the left corneal response was absent. Cold ater calorics revealed absent abduction of either eye, ut both eyes would adduct. A repeat CT scan again emonstrated extensive left cerebellar infarction, solution of the hydrocephalus, and no evidence of ain stem infarction.

Clinically the patient failed to improve. On the fourth ospital day, a cerebral arteriogram was performed igures 2 and 3), which showed occlusion of the left ertebral artery at the level of C2-C3 with fresh rombus. The left posterior inferior cerebellar artery nd the left superior cerebellar artery did not visualize, dicating embolic occlusion of these vessels.

Despite aggressive neurologic and pulmonary sup-ort, the patient continued to deteriorate and he died n the 27th hospital day. No autopsy was performed.

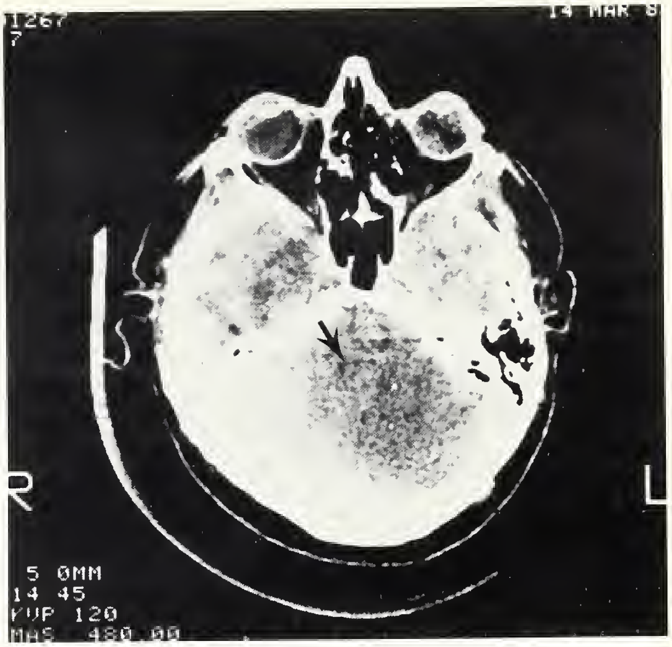
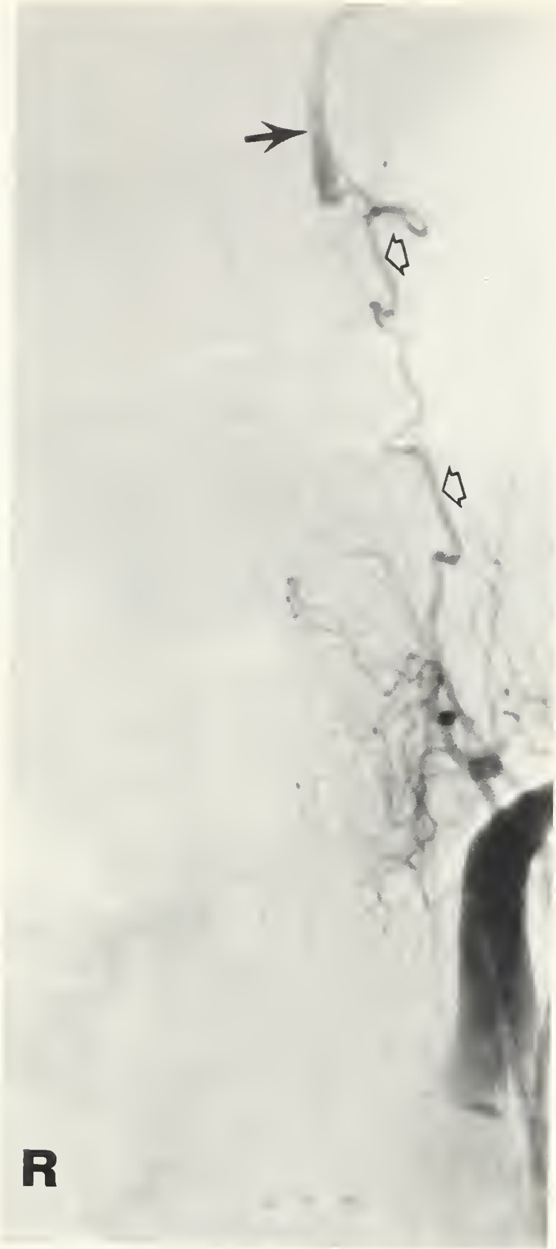


Figure 1b
Higher slice shows moderate hydrocephalus.

The clinical features of cerebellar hemorrhage and erebellar infarction are essentially the same, and can be ivided into three stages.[4] In the early stage, symptoms re related to destruction and compression of the erebellum itself, or from blood in the subarachnoid pace. Dizziness, nausea and vomiting, lack of balance, nd headache are the most common initial symptoms. ome patients may run a subacute course while others nay have premonitory signs or transient ischemic ttacks prior to cerebellar infarction. Truncal ataxia is the nost striking sign at this stage. Other early signs include ystagmus, appendicular ataxia and cerebellar dysar-hria. In the intermediate stage, symptoms are due to ompression of the fourth ventricle with hydrocepha-us and include irritability, confusion and drowsiness. igns at this stage include sixth nerve palsy, conjugate gaze paralysis, Babinski responses, peripheral facial palsy, Horner's syndrome and mild hemiparesis. In the late stage, symptoms are due to brain stem compression and include stupor, coma, posturing and cardiovascular instability. Signs seen at this stage are pinpoint pupils, ataxic respirations and apnea. Differential diagnosis in the early stage includes subarachnoid hemorrhage from ruptured aneurysm or arteriovenous malformation and acute labyrinthitis. However, once the intermediate stage is reached, there is no reasonable differential diagnosis other than cerebellar hemorrhage or infarction.[4] The features of hydrocephalus may overshadow the features of direct brain stem compression in patients comatose from cerebellar infarction.[22]

The time course in the evolution of symptoms and signs is extremely important in managing patients with acute cerebellar infarction, and is summarized by Sypert's twenty-eight untreated fatal cases of acute uncomplicated cerebellar infarction.[5] Obtundation or coma usually occurred between 48 and 96 hours after the onset of symptoms. Death usually occurred between the third and sixth days after the onset of symptoms, but only 6 to 30 hours after the onset of obtundation. Thus, therapy must be instituted promptly after the onset of obtundation if a fatal outcome is to be avoided.

The treatment approach to the patient with acute cerebellar infarction is a matter of some controversy. In general, when cerebellar infarction progresses to lethargy or coma, surgical treatment has a more favorable outcome than medical treatment. Greenberg reported a mortality of 80% with medical treatment versus a mortality of 40% with surgical treatment in patients with large cerebellar infarcts in stupor or coma.[22] Feely's report includes similar statistics favoring operative intervention in the setting of brain stem



Figures 2a & 2b

Left subclavian angiogram. a - Anteroposterior and; b - lateral projection. The left vertebral artery (solid arrows) is occluded from its origin to the C3 level, where it is reconstituted by collateral supply (open arrows).

compression.[9] Shenkin's study indicates that cerebellar infarction without hydrocephalus did well with medical management and that cerebellar infarction with hydrocephalus did well with ventriculostomy alone.[6]

Essentially, there are four surgical alternatives in the patient with acute cerebellar infarction: 1) ventriculostomy with external drainage, 2) ventriculostomy with external drainage and subsequent conversion to a ventriculoperitoneal shunt, 3) ventriculostomy with external drainage and cerebellar resection, and 4) cerebellar resection alone. The comparative results of these various surgical approaches were recently reviewed by Horwitz and Ludolph.[10] The overall surgical case mortality was 21% with no advantage in any one

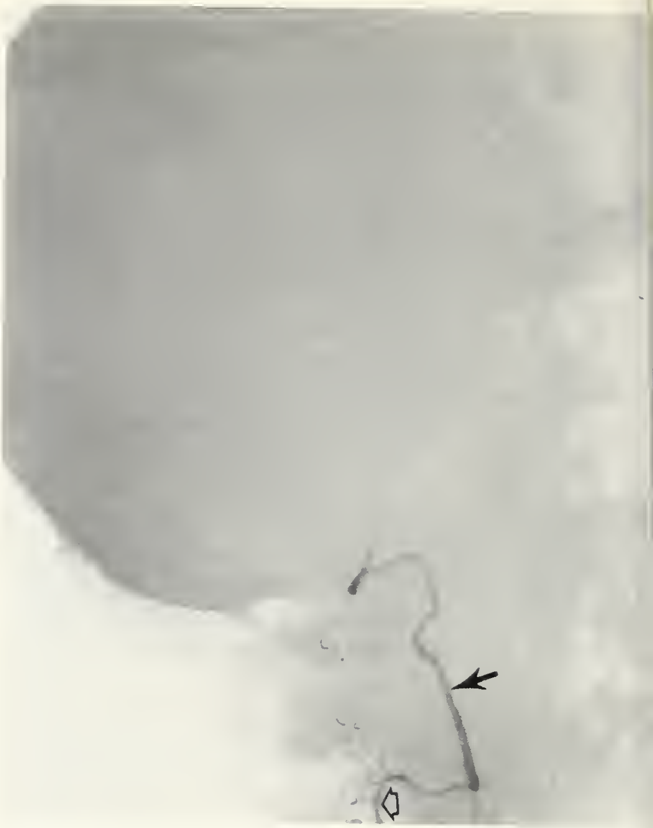


Figure 2b

specific surgical approach. Of the surgical survivors, i general the quality of life was very good. Usually, i intubation, hyperventilation, intravenous dexamethasome and dehydrating agents do not produce a promp improvement in the patient's level of consciousness immediate surgical intervention is necessary.[4,8-11,21,22]

Acknowledgements

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Discussion

The incidence of acute cerebellar infarction is bes approximated by the University of Washington autopsy series published in 1975.[5] In this study, acute cerebellar infarction was present in 1.1% of cases, or 58/5494 autopsies. Twenty-eight of the fifty-eight were classified as "uncomplicated" cerebellar infarction, i.e., not associated with massive brain stem infarction. All twenty-eight of these patients died of medullary compression and respiratory failure. None were operated on or were correctly diagnosed early. In the same series, 24/5494 had large, old cerebellar infarcts making the untreated mortality approximately 50% by this study. In the study were also found 39 cases (0.7%) of acute cerebellar hemorrhage, making the incidence of acute uncomplicated cerebellar infarction approximately 2/3 that of cerebellar hemorrhage. If the diagnosis is made by CT criteria alone, cerebellar infarction may actually be significantly more common than cerebellar hemorrhage.[6] Cerebellar infarction

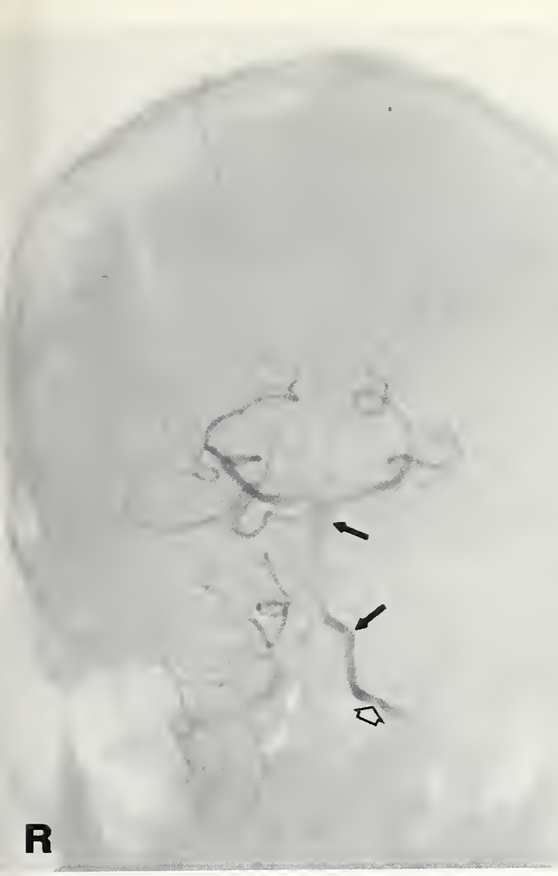

Figure 3
Right vertebral angiogram, anteroposterior projection. Retrograde filling of left vertebral artery is seen (open arrow). Solid arrows indicate origins of occluded superior cerebellar and posterior inferior cerebellar arteries.

occurs most frequently in the fifth through the eighth decades and the frequency is approximately equal in men and women.[4,5] Vertebrobasilar infarction is extremely uncommon in the pediatric population, and n Harbaugh's 1982 review of the English literature, there were only four reported cases of isolated cerebellar nfarction in children.[7]

There are a variety of etiological factors in the pathogenesis of cerebellar infarction. According to Heros, embolism is responsible for approximately 50% of cerebellar infarcts.[4] Presumably the heart is the most common embolic source and there is an increased ncidence of coronary artery disease, atrial fibrillation, and hypertension in these patients.[4,5,8] Other etiologies nclude diabetes,[5,9] polycythemia vera,[10] dehydration (in nfants), hypertensive crisis, angiography, sickle cell disease,[11] oral contraceptives,[9] and vertebral artery trauma or compression.

A number of published case reports implicate chiropractic cervical manipulation in the pathogenesis of vertebrobasilar strokes.[12-16] The largest review of this subject was published by Krueger and Okazaki in 1980.[17] They reported ten cases of vertebrobasilar stroke occurring shortly after chiropractic neck manipulation in patients without prior neurological symptoms. One patient died and nine survived with residual neurological deficits. Also included in their review are twenty-seven previously reported cases of vertebrobasilar system infarction associated with therapeutic cervical manipulation. Six of these twenty-seven patients died. An analysis of the combined thirty-seven cases revealed an absence of premanipulative ischemic symptoms, prompt occurrence of symptoms during the treatment, and failure to demonstrate osseous or arterial abnormalities in seven cases. Thus, in 7 of 37 cases, chiropractic cervical manipulation was the sole causative factor in the production of vertebrobasilar infarction. Anatomically there are three situations described in which head turning can produce extraluminal vertebral artery obstruction: 1) compression by skeletal muscles and fascial bands where the artery enters the transverse foramen at C6, 2) compression by osteophytes where the artery is within the transverse foramina, and 3) compression or elongation of the artery by the sliding structures of the atlantoaxial joint. The latter is the most common, and was probably the mechanism of vertebral artery injury in this patient.

Approximately 85% of symptomatic cerebellar infarctions occur in the distribution of the posterior inferior cerebellar artery (PICA),[4] involving the posteroinferior half of a cerebellar hemisphere.[5] About 25% of these infarcts are grossly hemorrhagic. According to Heros,[4] intracranial vertebral artery occlusion or bilateral vertebral artery occlusion occurs in 50% of cases, and PICA occlusion is found in 30%. A Wallenberg's (lateral medullary) syndrome develops in nearly one-third of patients with cerebellar infarction.[18]

The CT findings in cerebellar infarction were reviewed by Weisberg.[19] In all fifteen of his patients, CT scanning demonstrated a hypodense lesion, which was commonly wedge shaped, but could also appear rectangular or ovoid. The fourth ventricle was nonvisualized or compressed in seven patients and normal in eight. Hydrocephalus was present in three. However, the incidence of hydrocephalus in cerebellar infarction has been variably reported: it occurred in only one of seven cases in Ho's study,[20] but in five of six cases in Woodhurst's series.[11] According to Taneda,[21] acute cerebellar infarction accompanied by obstructive hydrocephalus occurred fifteen times in 1700 consecutive strokes.

The decreased density seen on CT generally corresponds to the anatomic area supplied by the occluded artery. An unenhanced CT scan is sufficient in the first few days following infarction. If the patient is scanned more than seven days but less than 30 days after the ischemic event, contrast enhancement is likely to be seen, and may help to more precisely define the infarcted area. The location and extent of cerebellar infarction as seen on CT does not directly relate to the clinical outcome.[20] Our patient was unusual in the sense that the distribution of both the PICA and the superior cerebellar artery were involved.

Vertebral artery occlusion is readily demonstrated by conventional arteriography or with the newer technique of digital subtraction angiography. The latter procedure carries less risk but requires an alert and cooperative patient.

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Perioperative Use of Inotropic Drugs

Jack G. Copeland, M.D.

Nearly all of the nonphysiologic conditions created b heart operations requiring cardiopulmonary bypas have been implicated in the genesis of postoperativ low cardiac output.[1,2] Continuous nonpulsatile perfusion, micro embolization and poor perfusion of capillar beds may cause multiple organ failure after two to thre hours of cardiopulmonary bypass. Cross-clamping th aorta causes irreversible myocardial ultrastructura damage if extended for over thirty minutes at normothermic temperatures. Lowering the myocardia temperature by topical or central cooling forestall irreversible damage for several hours. Regardless of th technique of preservation or the cross-clamp period, it i likely that all techniques cause some damage to th myocardium resulting in postoperative depression o cardiac function. Kirklin[3] has suggested that myocardia necrosis (focally scattered or subendocardial) cause postoperative low output syndrome and is responsibl for postoperative elevation of the creatine phosphokinase MB band. Our observations of scattered foc of subendocardial necrosis on early (less than seven post-transplant days) cardiac biopsies following hear transplantation in the absence of cardiac rejection support this theory.

One mechanism for scattered necrosis in open heart procedures may be air embolism, especially to the right coronary orifice and distribution of the right coronary artery. Even if considerable time is spent with maneuvers to remove air, complete and consistent freedom from air embolism may be a physical impossibility. Capillary "air locks" may result in scattered foci of necrosis most likely in the subendocardium, the most distal part of the myocardial capillary bed. Transmural or subendocardial myocardial infarction, known to occur in four to seven percent of coronary artery bypass operations, may also be a mechanism for myocardial injury and thus exacerbate preexisting dysfunction and any global injury which occurs.

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The effects of intraoperative damage are as varied as e etiologies, but they all fall into the category of yocardial dysfunction. Such dysfunction, if associated ith necrosis of 40% or more of left ventricular myoardium,[4,5] may cause death.

Short of death, the physiologic abnormalities related myocardial dysfunction range from minimal vasoonstriction with oliguria to "cardiogenic shock" haracterized by severe vasoconstriction, hypotension ystolic 80mm Hg), severe oliguria, and lactic acidosis. arly recognition of cardiac dysfunction and institution f appropriate inotropic therapy may salvage a conderable number of patients.

he Diagnosis of Low Output Syndrome

Commonly used monitoring techniques such as rterial, central venous and pulmonary arterial or left trial pressure measurements in combination with serial hermodilution cardiac outputs provide a considerable mount of information for identification of the patient equiring inotropic support. More basic information uch as cardiac rate and rhythm, body temperature, eripheral perfusion, urine output, arterial pH and lood gases and careful examination of the patient by a erceptive physician who continues to return freuently to the bedside may add a great deal more to the nformation necessary for making critical decisions.

Serial patient evaluation should include a careful hysical examination of the pupils, heart, lungs, skin, enous pulsations, abdomen and extremities. Only a imited neurologic exam need be done in the aneshetized patient immediately following surgery. But a ery careful examination of the hands and feet may be nore important than any objective data. I instruct our esidents to always check the feet looking for five signs or estimating cardiac output: 1) quality of pulses, 2) skin emperature, 3) skin color, 4) capillary refill and 5) enous filling.

Aside from evaluating cardiac surgical patients at the bedside, the current state of the art dictates that the physician anticipate which patient may be a higher risk and therefore need inotropic therapy. In order to anticipate, the physician must have a clear and detailed appreciation of the patient's preoperative condition, risk category, anesthetic management and operation. For instance, patients with severe chronic mitral stenosis and atrial fibrillation preoperatively almost uniformly need inotropic support after mitral valve replacement (See Table 1). Similarly patients with dilated ventricles and/or low ejection fractions (<.4) from mitral regurgitation, aortic stenosis or regurgitation, or previous myocardial infarction rarely do well without inotropic support. Congenital repairs which leave the patient with a large right ventricular outflow patch and some pulmonic insufficiency nearly always cause enough right ventricular dysfunction to decrease cardiac output and thus require inotropic support.

Quantitative measurements, clinical signs and anticipation are necessary for early diagnosis of low output syndrome. Several important facts are also helpful. Renal and cerebral blood flow autoregulate down to a mean arterial pressure of 60 mm Hg below which they fall linearly with pressure. Thus, minimally acceptable mean arterial pressure in adults is 60 mm Hg. In children, this value may be slightly lower. A cardiac index of less than 2 1/min/m^1 places the patient at markedly increased risk as does a systemic vascular resistance greater than 2100 dynes sec cm^{-5}.[5,6]

Table 1
Conditions Commonly Requiring Post-operative Inotropic Support

Valvular: chronic mitral stenosis; dilated left ventricle from mitral regurgitation, aortic stenosis or regurgitation; severe ventricular hypertrophy from aortic stenosis, chronic hypertension, coarctation or idiopathic hypertrophic subaortic stenosis.

Coronary: ejection fraction <.4 due to previous myocardial infarction; left ventricular aneurysm repair; mitral regurgitation or ventricular septal defect from previous myocardial infarction.

Congenital: Tetralogy of Fallot with large right ventricular outflow patch, atrio-ventricular canal with residual mitral or tricuspid regurgitation, large ventricular septal defect in association with small left ventricle.

Length of cardiopulmonary bypass: >2 hours.

Length of aortic cross-clamp time: >1 1/2 hours.

Anesthetic and operative management: low blood pressure during induction and prebypass periods.

The Typical Low Output Patient

The typical patient requiring inotropic therapy separates from cardiopulmonary bypass without difficulty. Arterial pressure is high for several hours and vasoconstricted, cool, pulseless, pale lower extremities with poor capillary refill and poor venous filling are seen (Table 2). The patient's temperature is low initially and climbs slowly from the 35°C range to 39°C while the extremities remain cool and constricted. Cardiac index is below 2 1/min/m^2 and systemic vascular resistance is greater than 1500 dynes sec cm^{-5}. In patients not requiring inotropic support, levels of endogenous

Table 2
Typical Findings in Patients Requiring Inotropic Therapy Post Cardiopulmonary Bypass

1. Anticipation (see Table 1)
2. Hypotension mean arterial pressure <70 mm Hg adults, <60 mm Hg children systolic arterial pressure <90 mm Hg adults, <70 mm Hg Children
3. Narrow pulse pressure (<30 mm Hg)
4. Urine output 30 cc/hour adults, <1 cc/kg/hr children
5. Five signs in feet: pale, cool, pulseless, poor capillary refill, absent venous filling
6. Persistent hyperthermia
7. Low cardiac index (<2.4 1/min/m^2)
8. High systemic vascular resistance (>1500 dynes· sec·cm^{-5})
9. Metabolic acidosis
10. Agitation

catecholamines fall to normal within 20 minutes after discontinuation of cardiopulmonary bypass[8,9] and by four to eight hours postoperative sympathetic tone decreases and the extremities begin to vasodilate progressively with a drop in core temperature and increasing peripheral warmth and arterial pulsations. Other signs of improved perfusion also become apparent (urine output, color, capillary refill, etc.). In the case of low output syndrome, progressive distal vasodilation is not observed; consequently the cool vasoconstricted areas cannot provide a means for dissipation of body heat and the core temperature remains elevated and often rises to the 40°C range. In these patients, cardiac index remains uniformly low and systemic vascular resistance elevated. If the patient has not yet been started on inotropic therapy and/or vasodilators this picture is an un-equivocal indication. One would hope, however, to have observed the trends towards continued constriction, falling blood pressure, decrease in pulse pressure (usually a pulse pressure less than 25 mm Hg. is indication of low output, less than 20 mm Hg is borderline for survival), and failure of systemic pressure to rise in face optimal filling pressures. A central venous pressure of 15 mm Hg is usually optimal as is a pulmonary artery wedge pressure of 14 to 18 mm Hg. Exceeding these loading pressures often results in pulmonary and dependent edema and hepatomegaly.

Effects of Inotropes on the Contractile Mechanism

The five commonly used inotropic medications include the catecholamines norepinephrine and epinephrine and three sympathomimetic agents: isoproteranol, dopamine, and dobutamine. They differ in avidity of binding to the beta myocardial receptors and in arrythogenic, chronotropic and peripheral effects. Structurally, they are quite similar and their mechanism of stimulating increased cardiac contractility (inotropic effect) is identical (see Table 3).

The myocardium contracts by virtue of myofilaments which "slide" past each other thereby reducing the length of the sarcomere. Simultaneous reduction of sarcomere length in millions of sarcomeres results in cardiac contraction (see Figure 1). Calcium facilitates this mechanism by binding to troponin on the actin (thin) filaments which then allows the actin and myosin (thick) filaments to interact.

These five inotropes bind to beta receptors on a myocardial cell membrane which in turn stimulate adenyl cyclase to increase levels of cyclic AMP which facilitates influx of calcium through calcium channels. The increase in intracellular calcium makes more calcium available for binding to troponin and in this way improves sarcomere shortening.[10,11] Calcium given by bolus or infusion may cause similar improvement, but this effect is usually limited to several minutes and becomes less apparent when the serum calcium rises above the normal range.

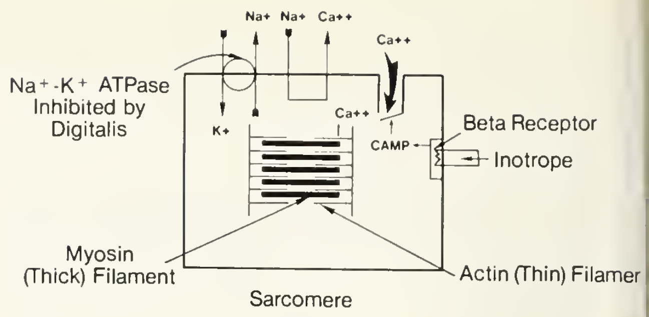


Figure 1
Digitalis preparations ("digitalis") block sodium-potassiu ATP'ase causing increased intracellular sodium and decreasin calcium loss by Na + - Ca + + countertransport thus increasin Ca + + available for calcium binding to troponin (on acti filament) permitting interaction between actin and myosin.

Catecholamines and sympathomimetic agents binding at th beta receptor increase levels of cyclic AMP which promot calcium influx through calcium channels making Ca + + mor available for binding to troponin. Figure based on Scholz[10] an Weber[11]

Each of these inotropes produce a unique clinical response. Therefore they are not interchangeable. The more powerful the agent (norepinephrine, epinephrine) the more skill, perseverance, and experience ar needed to administer the agent and the more likely combination with vasodilator therapy may be necessary

Choosing among the available inotropes for pos cardiac surgical therapy should be based upon the need of the patient. Blind dependence on one agent o another for all situations may deprive the patient of hi optimal chance for survival. Thus, the patient with a lov or normal heart rate, vasoconstriction and low cardia output is ideally suited for treatment with isuprel whereas the tachycardiac, dilated, patient with oliguri should be treated with dopamine.

Physiology of Inotropic Therapy

Frank-Starling curves describe a relationship betwee cardiac function and filling pressure. As the fillin pressure increases, cardiac output increases to a plateau If the heart is overfilled, cardiac output decrease (Figure 2). Inotropic stimulation of the normal hear results in supernormal cardiac outputs at all levels o preload. Myocardial depression results in subnorma cardiac outputs over the range of preloads. Inotropic

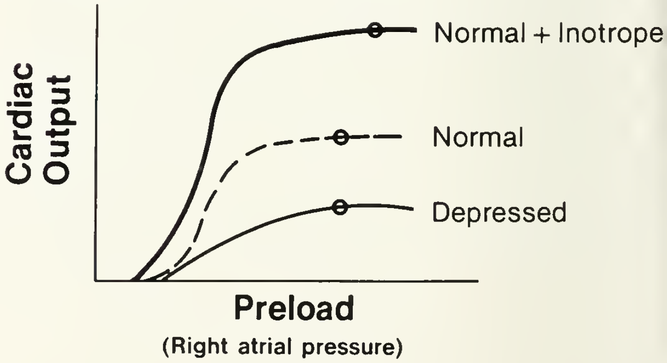
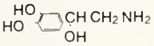
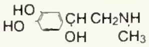
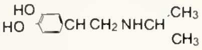
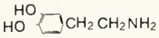
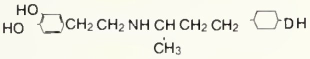


Figure 2
Family of Starling curves for depressed, normal and inotrope stimulated hearts.

Table 3
Structure action and relative potency of the commonly used inotropes.

STRUCTURE		ACTION	MECHANISM	RELATIVE CARDIAC* POTENCY	HEART RATE* INCREASE (BEATS/MINUTE)	BLOOD PRESSURE* INCREASE (mm Hg)
Norepinephrine		Direct	Beta Receptor Stim.	50	16	22
Epinephrine		Direct	"	100 +	16 +	15 +
Isoproterenol		Direct	"	100	33	− 19
Dopamine		Stimulates Norepinephrine Release	"	1	6	27
Dobutamine		Direct	"	4	8	16

from Tuttle, RR, Mills, J based upon dose to raise contractile tension by 50%
+author's estimate

mulation of the depressed heart returns its function ırve towards normal usually causing simultaneous crease in cardiac output and decrease in preload.

Similar function curves can be generated by using creasing concentrations of inotropes. In a comparison dobutamine and dopamine, we obtained curves for ch of these agents at infusion rates of 2.5, 5.0, and 7.5 /kg/min (Figure 3)[12] in patients after coronary artery pass grafting.

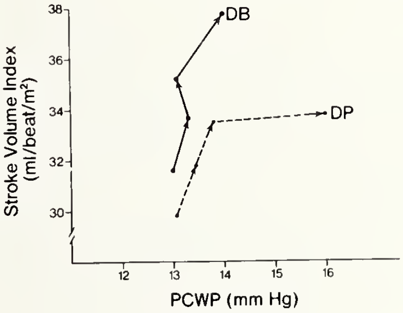


Figure 3

These curves show a rise in stroke volume at nearly onstant preload (wedge pressure) with infusion of obutamine. In contrast stroke volume rose little after e initial dose of dopamine 2.5 ug/kg/min while the edge pressure rose considerably and the rise of wedge ressure was associated with a rise in afterload (mean rterial pressure). No attempt was made to maintain reload by addition of volume. Therefore with opamine, the minimal rise in stroke volume was btained by increasing left ventricular resting wall ension (preload) and systemic vascular resistance fterload). In contrast, the rise in stroke volume with obutamine was associated with constant preload and a ight fall in afterload.

Ross and coworkers[13] have used the force-velocity elationship to further describe the normal, depressed and inotropic stimulated heart (Figure 4). Each of the curves shown is at a constant preload, with the magnitude of preload increasing as indicated by the arrow. Thus at a given afterload (x) the depressed heart has the lowest preload and velocity of contraction (stroke volume) (a.). At that same afterload, increasing the preload results in an increased stroke volume (b.). The preload may be increased thus increasing stroke volume until the Frank-Starling limit is reached. This may still be less than the stroke volume of a normal heart at the same afterload x (c.) and considerably less than the stroke volume of an inotrope stimulated heart (d.). Note that the inotrope stimulated heart functions at a higher preload than the depressed or normal heart which is another way of saying that at greater preloads it generates greater cardiac outputs.

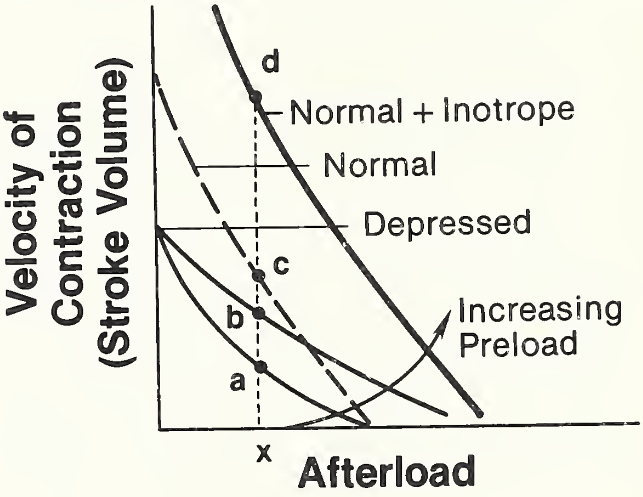


Figure 4
Force velocity relationship in depressed, normal and inotrope stimulated hearts. Note that each curve represents a constant preload and that preload increases as indicated by the arrow (After Ross[13]).

It is also of interest that increasing afterload along any of the constant preload lines results in a drop in stroke volume, or an "afterload mismatch." Thus, treatment of

Table 4
Summary of Hemodynamic Data for All Patients[a]

Variable	Control	Dose (μg/kg/min) 2.5	5.0	7.5
DOBUTAMINE (N = 10)				
HR (beats/min)	87.6 ± 12.4	88.2 ± 13.4	92.1 ± 13.6	93.4 ± 17.5
MAP (mm Hg)	79.4 ± 5.3	81.8 ± 4.7	82.4 ± 6.0	92.4 ± 15.3
PCWP (mm Hg)	13.0 ± 2.2	13.3 ± 2.9	13.1 ± 4.2	14.0 ± 3.7
CI (L/min/m^2)	2.7 ± 0.6	2.9 ± 0.6	3.2 ± 0.6[b]	3.4 ± 0.8[b,c]
SVI (ml/min/m^2)	31.6 ± 8.7	33.7 ± 10.0	35.1 ± 8.6	37.8 ± 11.4[b]
PVR (resistance units)	30.7 ± 7.5	29.5 ± 7.6	26.8 ± 6.1	28.1 ± 7.2
DOPAMINE (N = 10)				
HR (beats/min)	96.3 ± 13.4	96.3 ± 12.7	98.2 ± 12.2	99.8 ± 15.1
MAP (mm Hg)	80.4 ± 5.4	81.6 ± 9.1	85.1 ± 9.7	94.1 ± 12.1[b]
PCWP (mm Hg)	13.0 ± 3.4	13.4 ± 4.1	13.9 ± 4.6	16.0 ± 5.4[b]
CI (L/min/m^2)	2.8 ± 0.4	2.9 ± 0.6	3.2 ± 0.6[b]	3.3 ± 1.8[b]
SVI (ml/min/m^2)	29.7 ± 6.6	31.7 ± 8.2	33.5 ± 8.7	33.8 ± 10.1
PVR (resistance units)	29.4 ± 4.9	28.7 ± 6.2	27.4 ± 5.9	30.0 ± 6.8[c]

[a] Data shown as group mean ± 1 standard deviation.
[b] $p < 0.05$ vs control.
[c] $p < 0.05$ vs previous dose.

HR = heart rate; MAP = mean arterial pressure; PCWP = pulmonary capillary wedge pressure; CI = cardiac index; SVI = stroke volume index; PVR = peripheral vascular resistance (resistance units = MAP/CI).

patients with pressors in the absence of volume loading (preload increase) decreases stroke volume and cardiac output.

A schematic representation of the circulation (Figure 5, after Guyton)[14] may help explain some of the changes seen with administration of inotropes. The amount of blood returning to the heart (venous return, a.) must equal the amount of blood leaving the heart (cardiac output, b.). The relation between the forces shows:

$$\textbf{Cardiac Output} = \textbf{Venous Return} = \frac{\textbf{Afterload-Preload}}{\textbf{Resistance}}$$

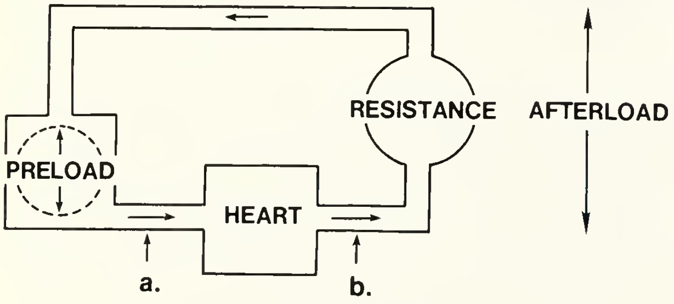


Figure 5
Schematic representation of the circulatory system (After Guyton[14]).

Drugs which increase the cardiac output with no change in afterload, drop the resistance and may drop the preload. These are positive inotropes.

Pressors which cause an increase in resistanc (afterload) drop the cardiac output.

Vasodilators which drop the resistance may increas the cardiac output if the afterload is not also simultaneously decreased.

Under conditions of constant resistance, increases i afterload with respect to preload increase cardia output. Increase of preload unaccompanied by increased afterload decreases cardiac output.

Comparison: Dopamine, Dobutamine and othe Inotropes

We have recently completed a study of dopamine an dobutamine in patients after coronary artery bypas (Table 4).[12] Dobutamine in increasing doses caused a increase in cardiac index and stroke volume withou significantly changing heart rate, blood pressure, wedg pressure or systemic vascular resistance. Dopamin raised cardiac index, but at the expense of an increase blood pressure, wedge pressure and systemic vascula resistance. Our conclusion was that dopamine acts as vasopressor even at doses less than 10 mg/kg/min. Sinc it increased afterload, heart rate, and myocardia contractility while dobutamine increased only contractility it must increase myocardial oxygen consumptio more than dobutamine. Dobutamine, on the othe hand, raises cardiac index by acting as an inotrop increasing stroke volume without increasing afterloa and left ventricular end diastolic pressure.

The most common postoperative scenario is th motensive vasoconstricted patient with high normal rt rate. Dobutamine may be more helpful in this ation.

Others have also found dobutamine to be effective er cardiopulmonary bypass[15,16] in augmenting cardiac put without significantly elevating heart rate. For ients with ventricles which were neither volume nor ssure loaded preoperatively, as in our study, cardiac put increases in face of falling systemic and monary vascular resistance with dobutamine.[17] butamine was also found to be more helpful than pamine in ventricles which were volume loaded operatively (mitral or aortic regurgitation), but not nificantly better in hearts which were pressure loaded rtic stenosis).

avorable results post cardiopulmonary bypass have en reported with dopamine when compared to prel.[18] An increase in cardiac output and a decrease in emic vascular resistance were noted with both drugs, heart rate was more markedly elevated with isuprel.

dditional studies of other inotropes have failed to blish that the catecholamines or isuprel are superior dobutamine. Dopamine has been demon-strated to se stimulation of vascular receptors in renal, senteric, coronary and cerebral circulation resulting ncreased blood flow to these areas.[19] In man the or benefit derives from the renal effects, and on our vice, dopamine is most often reserved for this pose. Dobutamine has been used most often as our t line drug because it is associated with positive tropic action but not with significant increase in heart e or afterload. Myocardial oxygen consumption may less with dobutamine than with other inotropes and ients with infarcts or ischemia may therefore benefit. en prevention of extension of an infarct is a major nsideration,[20,21] intra-aortic balloon counterpulsation d dobutamine may be of value.

t and Second Line Agents for Low Output Syndrome

he following description of the five agents nsidered in this article divides them into first and ond line agents in order to: 1. facilitate choosing ong these agents and 2. separate them into agents which are easier to use (first line) from drugs which require more attentive supervision (second line) (also see Table 5).

First Line Agents

Isoproterenol, a powerful inotrope and chronotrope and peripheral vasodilator, is best used in low output vasoconstricted patients with heart rates under 110/min and adequate preload. The dose range is 1-4 ug/min (.25-4 ug/min in children) with a dilution of 4 mg/1000 ccD5W (4 ug/cc) and a usual starting rate of 15 cc/hour lug/min (4 cc/hr in children). Start isoproterenol slowly (.25 to .5 mg/min) to prevent tachycardia and sudden vasodilatation. Raise the dose until the desired inotropic effect is obtained or the heart rate exceeds 120/min (adults) or 160/min (children). Simultaneous volume replacement is required to prevent hypotension. Dopamine (5-7.5 ug/kg/min) may be added to isoproterenol therapy to cause a mild pressor effect and maintain adequate urine output. Epinephrine may be added (1-4 ug/min) when an inadequate inotropic effect is obtained with isuprel alone. One must, however, be aware of the potential additive chronotropic effects of these two agents.

Dopamine, after cardiac surgery is only a moderately good inotrope and becomes a pressor at doses of ≥10 ug/kg/min (adults) and about ≥5 ug/kg/min (children). It is useful because it does not increase heart rate until the dose exceeds 5 ug/kg/min and it is associated with a increased blood flow in the kidneys (dopaminergic receptors) and urine output. The starting dose range is 2.5-5 ug/kg/min obtained with a dilution of 800 mg/1 D5W (800 ug/cc). One should generally not exceed 10 ug/kg/min unless in combination with a vasodilator.

We nearly always use dopamine primarily to increase renal blood flow in addition to another agent for inotropic support. Since neither dopamine nor dobutamine have prominent chronotropic effects this is a favorable combination, particularly when inadequate inotropic response obtained with 10 ug/kg/min of dopamine addition of dobutamine (5-30 ug/kg/min) may be helpful. Nitroprusside (.1-1 ug/kg/min) may counteract the pressor effects of dopamine. A careful

Table 5
Clinical Indications for Inotropes in Adults

	Cardiac Index	Heart Rate	Vascular Tone	Urine Output	Central Venous Pressure	Combination Agent(s)
prel	<2.4 1/min/m^2	<110	constricted	<30 cc/Hr	≥15 mm Hg	dopamine, epinephrine
pamine	any	any	any	<30 cc/Hr	12-15 mm Hg	dobutamine, nitroprusside, isuprel
butamine	<2.4 1/min/m^2	not >130	constricted	any	≥15 mm Hg	dopamine epinephrine
repinephrine	<2.4 1/min/m^2	any	dilated	>30 cc/Hr	≥15 mm Hg	regitine
nephrine	<2.4 1/min/m^2	not >130	constricted	any	≥15 mm Hg	nitroprusside, dobutamine

titration of each drug must be done for this to be effective. An optimal preload maintenance is vital with central venous pressure of 15 mm Hg or pulmonary artery wedge pressure of 14 to 18 mm Hg in adults, or central venous pressure of 10 mm Hg in children. Combination with isoproterenol (1-4 ug/min) may be helpful in situations where increase in cardiac output or heart rate is desirable and not satisfactorily obtained with dopamine alone.

Dobutamine is a powerful inotrope with activity similar to isoproterenol but without the chronotropic effect. It has little effect on heart rate until the dose approaches 10 ug/kg/min and causes increasing peripheral vasodilation as the dose is increased. We use a dose of 2.5-30 ug/kg/min and a dilution of 1000 mg/1. D5W (1000 ug/cc).

In the patient with persistent constricted low output, already receiving dobutamine, low dose dopamine 2.5 to 5 ug/kg/min may raise the blood pressure slightly and maintain a reasonable urine output (30 cc/hr adults or 1 cc/kg/hr children). Epinephrine at 1 to 4 ug/min should be used in addition to high dose dobutamine when further increase in cardiac output is necessary to prevent lactic acidosis. Table 5 lists clinical situations in which inotropes are indicated.

Second Line Agents

Norepinephrine is a pressor causing intense vasoconstriction. It is best used in vasodilated patients (systemic vascular resistance <1000 d sec cm^{-5}) with normal cardiac and urine outputs. A dose of .5-4 ug/min in a standard dilution 4 mg/1000 cc D5W (4 ug/cc) run at 15 cc/hr in combination with phentolamine (equal concentration) increases cardiac output and renal blood flow[22] in a shock preparation.

Epinephrine at low doses (1-2 ug/min) dilates peripherally and at higher doses (4 ug/min) vasoconstricts. Because it is a potent inotrope and chronotrope and causes decrease in renal blood flow, it is seldom used as first line drug. We reserve epinephrine for patients who cannot be stabilized with isuprel, dopamine or dobutamine. Our usual dose is 1-8 ug/min (.25 to 2 ug/hr in children) obtained by diluting 4 mg/1000 cc D5W (4 ug/cc) and administering at a starting rate15 cc/hr. (1 ug/min) (4 cc/hr is .25 ug/min in children). We nearly always use epinephrine in combination with nitroprusside to counter the peripheral constricting effect. Our method is to start epinephrine then add nitroprusside and enough volume to maintain preload. Our goal is to maintain blood pressure and preload and increase cardiac output with a resulting reduction in resistance. Epinephrine is occasionally added to ongoing dobutamine therapy when we find inadequate cardiac output and continuing low output syndrome in face of considerable dobutamine dosage (30 ug/kg/min). In this situation we consider using lasix 20-40 mg, or Lasix plus mannitol (1/2 gm/kg) and/or dopamine 2.5-5 mg/kg/min to maintain urine output.

General Policies in the Use of Inotropes

If the mean arterial rises above 100 mm Hg in adults or 80 mm Hg in children, we add nitroprusside, .1 t
ug/kg/min starting dose and titrate the dose higher
maintain what seems to be an ideal mean arter
pressure of 80-90 mm Hg in adults[23] and 60 to 75
children.

When combination therapy with first line agents fa
we turn to epinephrine to bring blood pressure in
physiologic range (mean arterial pressure 60 mm H
then add nitroprusside and volume therapy conc
mitantly to maintain optimal preload with maintenan
of arterial pressure.

Failure of this combination in the absence of
surgically remedial problem such as cardiac tampona
is usually associated with a grave prognosis. In m
cases, if intra-aortic balloon therapy has not alrea
been instituted it is started and left ventricular assist m
be considered.

Digitalis

Digitalis preparations are often used in postoperati
patients, but seldom felt to have inotropic effects equ
to any of the previously discussed inotropes. Potent
toxicity and absence of second to second contr
obtainable with intravenous infusions make digitalis
limited use. Transition from the inotropes discussed
this article to digitalis therapy as intravenously infus
inotropic medications are tapered is an important aspe
of postoperative care after the heart has begun to retu
towards normal function.

Amrinone

Amrinone, a new agent under clinical investigatio
apparently acts by a mechanism different from t
sympathomimetic inotropes and therefore may be
additional benefit to low output post cardiopulmona
bypass patients. Preliminary evidence suggests that th
agent inhibits the degradation of cyclic AMP
inhibiting the enzyme phospho-diesterase.[24] Th
resulting elevation in cyclic AMP increases availability
calcium for binding to actin thus allowing the actin an
myosin filaments to interact.

The usual intravenous dose of 1.5 to 3.5 ug/kg/min h
been effective in increasing cardiac output in patien
with end stage cardiac disease. In potential cardi
recipients, we have seen improvement when oth
intravenous inotropes including sympathomimetics an
digitalis glycosides have failed.

Further clinical trials will be necessary before th
agent is proven valuable in postoperative patients.

Treatment Options for Post-Bypass Low Output Syndrome

Our approach to the usual patient in low output aft
cardiopulmonary bypass is tailored to the usual finding
normal heart rate, vasoconstriction, low to low-norm
cardiac output, oliguria, and normal to low-norm
blood pressure in whom optimal preloading has failed t
improve the situation. We start with dobutamine an
follow the general schema outlined in Figure 6 treatin
hypertension with nitroprusside and continuing lo
output with the addition of other inotropes. W
generally turn to other first line agents before resortin

pinephrine and nitroprusside, a combination which feel is more powerful but more fraught with ential problems.

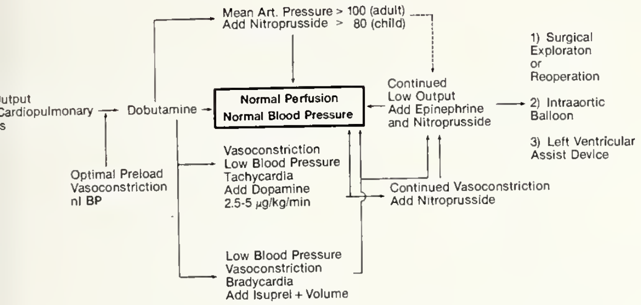


Figure 6

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Asthma and Arizona

Despite Arizona's reputation as a haven for people with respiratory disease, it has become apparent in recent years that changes in our environment have made the desert much less hospitable for the patient with lung disease than it was previously. Several years ago the University of Arizona, Tucson Epidemiologic Study and Obstructive Lung Disease was funded by the National Institutes of Health. Now in its 12th year, the study's primary objective is to determine the factors which relate to the development of airways obstruction. During the first year of the study it was clear that the prevalence of asthma, as well as chronic bronchitis, and emphysema was two to three times that which had been previously reported from other parts of the country. Several factors appear to relate to this high respiratory disease rate.

Eighty-eight percent of the over 3,000 subjects in the Tucson study were in-migrants from other parts of the country. Among them, 186 had come here for reasons directly related to their respiratory health. Within this group, 44.4 percent had received an asthma diagnosis by a physician. Subsequent analyses of these data reveal that the development of allergies to our local environment allergens is at least partially dependent upon the age at which one moves into the area. Thus, in-migrant children become positive to allergen prick tests at a high rate within the first two to five years of their Tucson exposure. By contrast, older adults require over ten years of residence before they develop significant atopy.

In addition to current in-migration, it is evident that prior generations also moved to Arizona for their lungs. As a result, even Arizona natives have a higher prevalence of asthma (5.6%) than has been reported from elsewhere. This suggests that in addition to current exposure to our increasingly high levels of aeroallergens, the native Arizonan may have a greater inbred tendency to develop asthma as a result of in-migration for respiratory reasons by his ancestors.

Besides genetic factors which provide a predisposition for the development of allergic disease, immunologic and environmental factors are extremely important. Immunologic studies in animals and man have demonstrated that once an individual becomes sensitized to an allergen, subsequent exposures with relatively low doses o the allergen favor IgE production. On the other hand, the injection of high antigen doses inhibits the production IgE antibodies and favors the production of blocking antibodies. O might speculate that initial intense exposures to pollen in the Midwest a the Northeast where the pollen count are high, but the season is short, coul have sensitized in-migrants prior to moving to Arizona. After arrival in Arizona, exposure to lower pollen counts during extended seasons coul boost IgE production and heighten sensitivity to pollen.

Arizona gained its reputation as a haven for asthma because many patients experienced almost miraculo improvement after their arrival. Becau of the dryness there were fewer sourc of pollen and mold spores, and fewer housedust mites were able to survive. However, as a consequence of *urbanization*, there has been greater than a ten-fold increase in the pollen and mold spore counts in the atmosphere since World War II. This increase can be attributed to planting and watering practices which have changed the native desert environme

The rise in pollen counts reflects an increase primarily in pollen from Bermuda grass, olive and mulberry trees and, to some extent, from weeds which tend to grow in disturbed areas

This new knowledge concerning these obstructive lung diseases is bein incorporated into educational presentations. We also believe that it i our responsibility to provide leadershi for Arizona communities and to help improve the environment for future generations. We trust other physicians too, will accept this challenge and support corrective strategies.

Robert A. Barbee, M.D.
Professor of Medicine
Jacob Pinnas, M.D.
Associate Professor of Medicine
Louis J. Kettel, M.D.,
Dean
College of Medicine
University of Arizona

CONFLICTS in Medicine

AFTER A SIX YEAR HIATUS—HOW COME YOU CAME BACK TO ME?
YOU'RE AS GOOD AS ANYONE ELSE, DOCTOR!
BERT WHIT-MAN

Briefly Noted

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elcomes the following new members.

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Internal Medicine
780 North Broad, Globe
National Defense Medical Center
Taiwan -1954

Maricopa

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Internal Medicine & Pediatrics
123 E. University Dr., Tempe
verpool Med. School, England - 1977

Jack J. Applefeld, M.D.
Internal Medicine
1111 East McDowell Road
T+2-002, Phoenix
University of Maryland - 1972

James I. Bernene, M.D.
Endocrinology
1111 East McDowell Road, Phoenix
Albany Medical College - 1967

Richard O. Dolinar, M.D.
Internal Medicine and Endocrinology
1450 South Dobson Road, Mesa
State University of New York - 1972

Michael J. Dupuy
Anesthesiology
219 East Virginia, Phoenix
Tulane University, New Orleans - 1979

Bert W. Harned, M.D.
Anesthesiology
3443 East McDowell Road, Mesa
Northwestern, Chicago - 1947

James R. Heap, M.D.
Occupational Medicine
111 South 34th Street, Phoenix
University of Arizona - 1975

Felipe U. Lim, M.D.
Pathology
2601 East Roosevelt Street, Phoenix
Manila Central University
Philippines - 1957

Okky T. S. Oei, M.D.
Family Practice
3604 Wells Fargo, No. L, Scottsdale
University of Toronto - 1971

Pacita A. Tee-Opulencia, M.D.
Pediatrics
941 South Dobson Road, No. 208, Mesa
University of Santo Tomas - 1969

Peter W. Vann, M.D.
Emergency Medicine
6025 North 20th Avenue, Phoenix
University of Arizona - 1976

Pima

John Bentley, M.D.
Anesthesiology
5949 North Camino Del Condo, Tucson
University of Arizona - 1976

J. A. Browning, M.D.
Pediatrics
6365 North Orange Tree Drive, Tucson
University of Cincinnati - 1941

Timothy Joseph Dupont
Anesthesiology
11 East Orange Grove Road
No. 1717, Tucson
University of Colorado - 1980

Clarke David Kareus Lambe, M.D.
Emergency Medicine
7732 North Jensen, Tucson
University of Arizona - 1975

Pinal

Benjamin H. Licup, M.D.
General Surgery
P. O. Box 789, Florence
Manila Central University,
Philippines - 1966

Resident Members

Maricopa

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Psychiatry
Good Samaritan Hospital
and Medical Center
Universita Degli Studi,
Bologna, Italy - 1976

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Four **Arizona Medical Association** members were honored with the Distinguished Actions in Health Award at the annual meeting of the State Health Planning Advisory Council and the Statewide Health Coordinating Council in March. Receiving the awards were **Herbert K. Abrams, M.D., M.P.H.**, Tucson, **John W. Kennedy, M.D.** and **Wallace A. Reed, M.D.**, Phoenix, and **A. J. Oschner, II, M.D.**, Yuma.

Dr. Abrams founded both the Department of Family and Community Medicine at the University of Arizona College of Medicine and the Arizona Center for Occupational Safety and Health. Now retired, he was director of the department for ten years and director of the center for six years. As department chairman, Dr. Abrams inaugurated programs in rural health, family practice and preventive medicine.

Dr. Oschner, as director of health for Yuma County, contributed significantly to developing and implementing health programs in western Arizona. He played a leadership role in creating county wide immunization, family planning and nutrition programs.

Dr. Kennedy, started the first mobile hospital in Arizona and helped organize the first civil disaster committee. He was involved in Maricopa County's first hospital bed need plan and first study of public health services. He also participated in the evaluation of nursing homes and in the establishment of guidelines for construction and operation of ambulatory surgery programs.

Dr. Reed developed the 'surgicenter' concept, locating in Phoenix the nation's first, free-standing outpatient surgical clinic. He was associated with health planning activities in Maricopa County in the mid '60s and was active on the Maricopa County Health Planning Board.

Carlos C. Craig, M.D., Phoenix, received the "Sally" award at the annual Salvation Army salute dinner in March.

Drs. Monte Du Val, Donald P. Schaller, and **Neil O. Ward**, Phoenix, participated in the May State Bar of Arizona Continuing Legal Education program, "Antitrust and Health Care Medicine in the Marketplace." Dr. Du Val served as moderator and Dr. Ward participated in an afternoon breakout sessions entitled, Hospitals and Physicians—Allies or Competitors. Dr. Schaller served on the panel discussin Alternative Financing and Delivery System.

Thomas P. Foerster, M.D., chairman of the Arizona Medical Association Sports Medicine Section, was the gues of the British Association of Trauma in Sport (BATS) at the Association's first BASIC (Basic Athletic and Sports Injur Care) course held in Cardiff, Wales, in April, in conjunction with the Welsh Association of Sports Trainers. Dr. Foerster was invited to describe the Arizona Medical Association's B.A.S.I.C program, which serves as the prototyp for an educational module to be developed for sports trainers throughout the United Kingdom.

Philip Levy, M.D., Phoenix, was program director for the Current Perspectives in Diabetes seminar which was held in both Phoenix and Prescott in March. Guest speakers included **Drs Marshall B. Block, W. James Howard,** and **Jerome H. Targovnik**, Phoenix.

Arthur Lindberg, M.D., Glendale, wa elected the first chief-of-staff of the new Thunderbird Samaritan Hospital.

Muragasu Nagule, M.D., was the guest speaker at the March Health Talk Forum cosponsored by the Arizona Medical Association and Blue Cross/Blue Shield of Arizona. His topic was "Diabetes, the Diagnosis and Treatment."

William G. Payne, M.D., Tempe, is the first recipient of Tempe's Don Carlos Humanitarian Award sponsored by the Tempe City Council. The award will be presented yearly to a Tempe resident whose service to the community, state, or nation is in the tradition of Charles Trumbull Hayden, humanitarian who founded Tempe in 1871 and was affectionately known as "Don Carlos."

Arizona Medical Association members serving on the faculty of the Arizona Medical Association Tenth Annual Sports Medicine Symposium were: **Drs. William C. Brainard, Russell P. Chick, Leland L. Fairbanks, Jeffrey M Grant, Robert L. Hagan, Timothy R. Harrington, Douglas W. Kelly, Eugene Leibsohn, Jack K. Mayfield, Gerald C. Moczynski, Edward C. Percy, Robert E. T. Stark, Robert L. Wilson** and **Robert O. Wilson.**

opito L. Robles, M.D., meets with Tucson's women ysicians and urges participation in organized medicine at all els—county, state and national. With Dr. Robles (left to ht) Drs. Louisa I. Piccone, Jane M. Orient, and Geraldine L. eeman.

s. Sidney E. Salmon and Roy S. Weinrach (left to right, eground) at Current Perspectives in Cancer seminar.

offee break for Drs. Robert M. Anderson and Frederick J. lenick at Current Perspectives in Cancer seminar.

Current Perspectives in Cancer, Tucson, Drs. Robert M. Anderson and Stephen E. Jones.

Attendees at Current Perspectives in Cancer seminar.

Taping Pima County Medical Society's "Prescription for Health" Cable TV program: Drs. Ronald P. Spark, David Ben-Asher, and Frank A. Shallenberger, Jr.

Dr. Maragusu Nagul talks about diabetes at ArMA's March Health Talk Forum.

Dr. Earl J. Baker, Phoenix, and Ronald P. Spark, Tucson, are present when Governor Bruce Babbitt signs into law HB 1097 which repeals Arizona's premarital syphilis testing requirement.

Louis S. Tan, M.D., Current Perspectives in Allergy moderator, with guest speakers, Drs. Michael H. Mellon and Constantine J. Falliers.

Abraham I. Podolsky, M.D.

Obituary

Abraham I. Podolsky, M.D.
November 3, 1908 - January 6, 1984
President of The Arizona Medic
Association 1956 - 1957

Our profession lost a unique and dedicated physician when Dr. Abraha I. Podolsky passed away on January 6, 1984.

"Abe" was born in Pittsburgh, Pennsylvania, on November 3, 1908. In his youth, he became a superb boxer and football player, as well as a first-class violinist. He attended the University of Pittsburgh and Chicago Medical School. His internship was at Cook County Hospital in Chicago.

Abe Podolsky came to Arizona in 1937 to set up his medical practice in Somerton. He later married Audrey Livingston, a member of a pioneer Yuma family. They have three children all highly successful individuals. Their youngest son, Tom, is an ophthalmology resident at the University of Missouri Medical Center and attended medical school at the University of Arizona.

Abe was always very active in the medical affairs of his county and state. He was President of the Yuma County Medical Society in 1942, Chief of Staff at Parkview Baptist Hospital (now Yum Regional Medical Center) in 1970, a past member of the Arizona Board of Medical Examiners, and president of the Arizona Medical Association in 1956-1957.

Abe was a member of the "old school," honest, hard-working, dedicated and independent. He resented government and third-party interference in his practice of medicin t cared for his patients regardless of ether they paid him or not.

He was a fine pediatrician. Abe died pediatric literature every ening, often reading late into the ht. He attended postgraduate urses diligently and his beautifully nd-written workups are examples of ecision and thoroughness.

Abe Podolsky was a fine physician. came from a time when doctors had energy, training and experience to everything well. He cared deeply for of his patients, regardless of their cial or financial circumstances and vays did what he thought was best them.

Dr. Abe Podolsky was a tireless pporter of high standards of medical ics and practice, an active member his community, and a patron of the s.

His patients and peers will sorely miss n.

bert C. Cannell, M.D., F.A.A.P. Yuma, izona

ArMA Reports

e minutes in this section have been ndensed. A complete copy will be nt to any member requesting them.

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE

The Articles of Incorporation and laws Committee of the Arizona edical Association, Inc., met on turday, March 17, 1984.

The committee received the 1/31/84 quest by the Board of Directors to view the bylaws of the Association d consider a change in the wording Chapter II, Section 3(B) relating to alifications for elevation to Fifty-Year ub membership, which change would ow the inclusion of all categories of embership and not, in fact, restrict e granting of membership to only ctive" members.

The committee reviewed the plicable portions of the bylaws which ould require amendment, and scussed at great length what they elieved was the original intent when is section of the bylaws was written — honor and reward those physicians ho, after 50 years or more (half of that Arizona), were still "actively acticing medicine."

It was moved and carried to recommend to the Board of Directors that no change be made in the wording of Chapter II, Section 3(B) of the Association Bylaws and that membership in the Fifty-Year Club be reserved for those it was originally intended to honor.

The committee additionally made recommendations regarding minor wording changes which would clarify the intent of Resolution Nos. A-3-84 and 4-84.

BOARD OF DIRECTORS

A meeting of the Board of Directors of the Arizona Medical Association, Inc., was held on Saturday, March 24, 1984, at the Association's headquarters.

The written Annual Report of the Auxiliary was received and Jan Lisboa, President of the ArMA Auxiliary, spoke briefly regarding the progress made this year, in that there were now seven active county auxiliaries and attempts are being made to establish those of the other counties and that permanent offices had been established at the ArMA Building and beginning the week of March 26th, they would have office hours on Tuesday and Thursday, staffed by a part-time secretary. Mrs. Lisboa expressed her thanks and appreciation for the invitation to her and Mrs. Holmes to attend and participate in Board meetings.

The Board was apprised of regarding William C. Scott, M.D.'s recent nomination by the ArMA Board of Trustees and, it was moved and carried to reaffirm the 1/22/83 action of the Board that the Arizona Medical Association go on record as endorsing the candidacy of William C. Scott, M.D., for a position on the AMA Council on Scientific Affairs and that ArMA financially support Dr. Scott's campaign for such position within budgetary restrictions.

The Board was informed by Dr. Neubauer of the current financial and membership status of ArMPAC as well as the fact that still only less than ten percent of Arizona physicians were members, which he would like to greatly increase, so that it could continue to be one of the most potent PACs in the state. Additionally, Mr. Walker briefly commented on the fact that legislative opinions are being solicited from ArMA by members of the legislature.

Dr. Kettel talked briefly about recent developments at the College of Medicine relative to the admissions process which had recently been completed, tuition increases, interest in various pieces of legislation, as well as updates on the Kino Community Hospital purchase. Dr. Kettel also apprised the Board of Dr. H. Belton P. Meyer's recent appointment to Statewide Health Coordinating Council.

A proposed resolution regarding Voluntary Fee Freeze was reviewed and discussed by the members at great length and, it was moved and carried that the Board of Directors of the Arizona Medical Association submit to the House of Delegates during its 1984 Annual Meeting a Resolution calling for a Voluntary Fee Freeze by Arizona's physicians.

Mr. Robinson reported on the 3/2/84 meeting of the Arizona Hospital Association Board of Directors' meeting, stating that 30 to 40 items were discussed, with the main concerns being those of the Coalition and AHCCCS.

The Board received copies of ArHA's 3/19/84 press release regarding cost control measures and its Interim Legislative Proposal.

The Board discussed the reports which are, by the existing bylaws, to be submitted through the Board to the House of Delegates during its annual meeting. The Board, being unclear as to whether the intent was for such reports to be screened and only those containing recommendations be submitted to the House of Delegates or that *all* reports be submitted, regardless of content, for informational purposes, took the following action: it was moved and carried to refer all reports which have been or will be received from officers, committees, etc., to the Executive Committee for its determination as to the procedure to be followed in submitting same to future meetings of the House of Delegates.

It was moved and carried to approve and ratify the minutes of the Executive Committee meeting held on January 20 and February 17, 1984.

It was moved and carried to approve the Finance Committee's 1985 proposed budget, to be submitted to the House of Delegates for action during its April meeting.

It was also moved and carried to approve the 3/10/84 action of the Finance Committee to support Resolution No. 7-84 regarding discontinuance of the Building Fund Assessment, with the understanding that those members who are currently paying off the assessment would be forgiven any balance outstanding at the time of adoption of the resolution.

The Board received 3/14/84 correspondence from the Finance Committee stating that it had followed the 1/21/84 direction of the Board of Directors and found seed money to provide staff and initiate the program on salt reduction, 1983 Audit Report of Henry and Horne, CPAs, and the

Financial Statement for period ending January 31, 1984.

It was moved and carried to approve and support the recommendation of the HMSS Governing Council that ArMA encourage hospital medical staffs to include line or floor nurses (nonadministrative) on committees of the medical staffs which deal with patient care for the sole purpose of improving or enhancing the quality of that care.

It was moved and carried that the Arizona Medical Association would issue letters of endorsement of both the Northern Arizona Medical Evaluation System and the Arizona Physicians Review Organization in their applications seeking designation as the professional review organization for Arizona.

It was moved and carried that the Arizona Medical Association reaffirms its opposition to the initiative proposed by the Arizona coalition for cost effective quality health care and supports, in principle, a legislative approach to a solution to rising health care costs during the current legislative session.

It was moved and carried that the Association immediately publicize the action of its Board of Directors against the initiative and in favor of a legislative approach to the rising health care costs problem.

It was moved and carried that the Association immediately contact, by personal letter, the Governor and all legislators setting forth the Association's position and requesting immediate legislative action on the matter of rising health care costs.

The Board received 2/28/84 action by the Pima County Medical Society Board of Directors "that no bylaw changes are recommended at the present time with respect to de-unification."

For clarification purposes it was moved and carried that a revised Resolution No. 4-84, be approved for inclusion in the second mailing to the House of Delegates for their consideration during the 1984 Annual Meeting.

It was moved and carried to approve the recommendation of the Articles of Incorporation and Bylaws Committee that no change be made in the wording of Chapter II, Section 3(B) of the Association Bylaws and that membership in the Fifty-Year Club be reserved for those it was originally intented to honor, i.e., those physicians who were "active" members of the Association and had actively practiced medicine for fifty years, half of that time in the state of Arizona.

LONG RANGE PLANNING COMMITTEE

A meeting of the Long Range Planning Committee of the Arizona Medical Association, Inc., was held on Saturday, April 7, 1984.

The committee reviewed the goals of the Association adopted on March 26, 1983 and received an overview from Dr. Baker on the development of those goals and the activities which were ongoing to accomplish same. After discussing the goals at great length and noting a concurrence by the members that, when a major rewrite of the goals occurred, a recommendation that the word "citizens" in Goal I be changed to "people," so as to be all encompassing and in no way restrictive it was moved and carried that the present seven goals of the Arizona Medical Association, as adopted by the Board of Directors on March 26, 1983, continue. Additionally, in noting that most staff and financial support was being given to achieving Goal I, it was agreed that, during the next meeting of the committee, a thorough review of the goals would be made to determine and make appropriate recommendations regarding whether more of such support should be channeled toward other goals as well.

In discussing how best the Auxiliary could contribute to solving the needs of the profession, Mrs. Holmes, President-Elect of the Auxiliary, briefly outlined the recommendations from their Long Range Committee which would be acted upon during their upcoming meeting. The committee discussed the need of enhancing service to members to create a desire to belong as well as a change of image so that Auxiliary participation and activities would appeal to the male, as well as female, spouses of physicians. It was moved and carried that the matter of Auxiliary membership recruitment and retention be referred to ArMA's Ad Hoc Membership Committee, with the recommendation that it work closely with the Auxiliary in conducting an effective membership drive. It was moved and carried that, subsequent to its annual meeting, the Auxiliary provide the final goals adopted during that meeting to the Executive Committee of the Association for its determination and recommendation for active participation in the appropriate ArMA Committees or in specific Association activities.

The topic of development of future leadership for the Association was discussed by the committee, with special emphasis being on the creation of a position of Vice-Speaker of the House of Delegates, it being the contention that Speaker of the House was a very important position which could not just be assumed by an individual but required some training and interest. It was moved and carried to submit a Resolution to the 1984 Meeting of the House of Delegates recommending, as part of the Plannin and Development of Future Leadershi for the Association, the establishment of an office of Vice-Speaker of the House of Delegates and, if adopted, th matter be referred to the Articles of Incorporation and Bylaws Committee for drafting of the appropriate bylaws changes required to accomplish same for return to the House of Delegates i 1985.

Dr. Baker and Mrs. Holmes reported on their recent attendance at the AMA Leadership Conference, which is an experience recommended to every member of the medical profession. Various presentations during that meeting dealt with relations to the media, how to be interviewed on TV, and parliamentary procedure, the latte of which both felt was exceptional. Th being a very important topic and one about which very few have knowledge it was moved and carried to recommend to the Scientific Assembly Committee that it consider a program on Parliamentary procedure for one of the 1984-85 "Current Perspectives" series. Realizing that an out-of-state expert on this subject might be too costly, it was suggested that the Scientific Assembly Committee might first contact the Arizona universities to determine whether anyone on their staff was well versed in this field and would be willing to participate in such a program.

The subject of ArMA committees an their functions was discussed by the committee, it being a concern that some committees were presently inactive or that the duties set forth in the bylaws for a specific committee ma no longer be appropriate. It was move and carried that, during the next regularly scheduled meeting, this committee would carefully review the committee structure of the Association and, in conjunction with that review, would obtain copies of the minutes for meetings held during the past two year by the Medical Education, Physician's Health, Professional and Publishing Committees, requesting the chairman of those committees to be present at the next meeting to discuss their ongoing activities.

DRGs for physicians were discussed, with the committee being apprised of the 4/26/84 presentation to be made at the Annual Meeting of the Hospital Medical Staff Section as well as the fact that Dr. Joseph Boyle would be meeting with the ArMA Board of Directors on April 12th, during which this subject would be discussed in an attempt to get more background rding AMA position. It was also gested that possibly the Scientific embly Committee consider a gram on this timely and vital issue.

was agreed that the next meeting his committee would be held on urday, June 30, 1984, after the AMA nual Meeting in Chicago.

EXECUTIVE COMMITTEE

special meeting of the Executive mmittee of the Arizona Medical ociation, Inc. was held on Thursday, il 12, 1984.

ociation's Position on Arizona mber of Commerce Proposal

r. Baker briefly presented to the mmittee the basis for the statement nad prepared regarding the ative, a legislative approach to a tion to rising health care costs, and recent proposal made by the zona Chamber of Commerce for an rim solution, providing at the same e the outcome of discussions held a small group of ArMA leadership, n the Arizona Hospital Association l the Coalition, and the resulting nclusion that some attempt must be de to stop the initiative before it s to the public and develop some islation which would meet, for the e being, the needs of all parties and w a workable solution to evolve.

he Executive Committee considered Baker's proposal that ArMA attempt meet with legislators to see if, during session, some interim legislation uld be passed, on which all parties ncerned - the Arizona Medical Association, the Arizona Hospital Association, the Arizona Coalition for Cost Effective Quality Health Care, and the State Legislature could agree would provide temporary relief to rising health care costs and regulation, would delay the initiative from being placed on the ballot, and allow time for a permanent solution to be developed; and it was moved and carried that Dr. Earl Baker would contact Representative Barr, informing him of the Association's opposition to the initiative and requesting some type of legislation which would grant an interim solution to rising health care costs. It was additionally agreed by the members that the written, revised statement presented to the committee by Dr. Baker could, after any meeting with Barr and if appropriate, be used as background for the Arizona Medical Association's position but it was felt to be unsatisfactory, in its present form, as a press release.

The committee received the Position Statement of the Arizona Nurses' Association on Cost Containment.

ArMPAC BOARD OF DIRECTORS

The ArMPAC Board of Directors of the Arizona Medical Association met Wednesday, April 18, 1984.

A Treasurer's Report, as of March 31, 1984, was distributed to each member present. The report showed in the General Fund a balance of $42,287.02 and an Educational Fund balance of $5,421.76.

Dr. Neubauer spoke briefly on the Seminar held in Phoenix on February 18, 1984. The Seminar was a success but attendance was much lower than the one previously held in Tucson.

Discussion followed on various solicitation letters received by ArMPAC from candidates. It was agreed that at the proper time, each candidate's record should be reviewed. It was also suggested that when a contribution is made, a member of the ArMPAC Board should invite the candidate to lunch and present him/her with a check from ArMPAC. There was also lengthy discussion on "generic" campaign committees set up by House and Senate Republican and Democratic caucuses, such as the House Victory Fund. It was moved and carried to support candidates on an individual basis only.

Dr. Neubauer told the Committee that the membership would be changing next week after the Annual Meeting. He invited all members who are interested in remaining on the Board to let him know and to submit names of anyone they think would make a good member.

The resignation of Manuel Ma. Guerrero, III, M.D., as Secretary was accepted.

The next meeting will be held shortly after candidate's filing date. At that time it is planned to go over each candidate on an individual basis, determine how he/she feels on medically related issues, and base contributions on these decisions. ArMPAC is sending out a solicitation mailing this week to all nonmembers of ArMPAC, so it was decided to defer an ArMPAC solicitation until June.

Future Medical Meetings

e following institutions and organizations have n accredited for their continuing medical ucation programs by the Arizona Medical ociation and/or the Accreditation Council for ntinuing Medical Education.

rizona Chapter, American Cancer Society
rizona Medical Association
rizona State Hospital, Phoenix
rizona Thoracic Society/Arizona
  Lung Association
Valter O. Boswell Memorial Hospital,
  Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
  of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program,
  (THMEP) Tucson
University of Arizona College of Medicine,
  Tucson
Veterans Administration Medical
  Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

MAY

Blood Glucose Monitoring and its Applications
May 22, 12:00 noon, Support Services Auditorium, Boswell Memorial Hospital, Sun City, Arizona. Contact: Richard Doliner, M.D., Endocrinologist. Sponsored by Boswell Memorial Hospital. Approved for hour per hour Category 1 credit.

Pathophysiology of Angina Pectoris
May 30, 12:00 noon, Support Services Auditorium, Boswell Memorial Hospital, Sun City, Arizona. Contact: Victor Cresenzo, M.D. Sponsored by Boswell Memorial Hospital. Approved for hour per hour Category 1 credit.

JUNE

Infection in the Critically Ill Patient
June 5, 12:00 noon, Support Services Auditorium, Boswell Memorial Hospital, Sun City, Arizona. Contact: Stephen Lerner, M.D. Sponsored by Boswell Memorial Hospital. Approved for hour per hour Category 1 credit.

Medical Liability Case Presentation Conference
June 20, 12:00 noon, Support Services Auditorium, Boswell Memorial Hospital, Sun City, Arizona. Contact: Robert Briton, M.D. Sponsored by Mutual Insurance Company of Arizona. Approved for hour per hour Category 1 credit.

Pulmonary Disease
June 27, 12:00 noon, Support Services Auditorium, Boswell Memorial Hospital, Sun City, Arizona. Contact: Cash Beechler, M.D. Sponsored by Southwest Chest Consultants. Approved for hour per hour Category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept. & Nov.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOEN

1747 East Thomas Road, Phoenix, Arizon 85016. Contact: Medical Staff Secretary f additional information.

Physicians Continuing Education Prograr
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E

Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

mily Practice
eekly, Wednesday, 12:00-1:00 p.m.,
mily Practice Center.
mor Conference
d, & 4th Wednesday, 12:00-1:00 p.m.,
nf. Rms. E-F.
rgical Grand Rounds
eekly, Thursday, 7:00-8:30 a.m.,
nphitheater.
mily Practice
eekly, Thursday, 12:00-1:00 p.m., Family
actice Center.
dical Noon Conference
eekly, Thursday, 12:00-1:00 p.m., T-8
nf. Rm.
nt Tumor Gyn Conference
d Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
dicine Grand Rounds
eekly, Friday, 8:00-9:00 a.m.,
nphitheater.
urology Grand Rounds
eekly, Friday, 12:00-1:00 p.m.,
nphitheater.
ychiatry Grand Rounds
eekly, Friday, 11:00-12:00 noon, Conf.
n. E.

KINO COMMUNITY HOSPITAL (THMEP)

00 E. Ajo Way, Tucson, AZ 85713.
ntact: Eric C. Ramsay, M.D., Approved
Category 1 credit.
rgical Conference
eekly, Monday 8:00 a.m., Contact:
Fischer, M.D.
dical Conference
eekly, Monday, 12:30 p.m., Contact:
ief Medical Resident
/GYN Pathology Conference
eekly, Thursday, 1:30 p.m., Contact:
Fleishman, M.D.
ychiatry Journal Club
eekly, Thursday, 12 Noon, Contact:
se Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

02 W. Campbell Ave., Phoenix, AZ 85008
ntinuing Medical Education Program
d & 4th Wednesday, 12:30 p.m.,
nference Rms.
mor Board
& 3rd Mondays, 12-1 p.m., Medical
nference Rms.

MARICOPA MEDICAL CENTER

01 E. Roosevelt, Phoenix, AZ 85008.
ntact: Leonard Tamsky, M.D.
esthesiology Morbidity & Mortality
nference
eekly, Mondays, 2:45 p.m.
rgery Burn Grand Rounds
eekly 7:30 a.m.
dicine Chest
& 3rd Monday, 12 Noon.
dicine GI
d & 4th Monday, 12 Noon.
dicine Dermatology
Monday, 12 Noon.
est/Surgery
eekly, Mondays, 1:30 p.m.
nbulatory Pediatrics
eekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m.,
Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil
Shernoff, M.D.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7 :30 a.m.
Anesthesiology Journal Club
4th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
4th Thursday, 8:00 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon. **Surgery Tumor Board**
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12 :30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for
Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th
Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor
Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D.,
Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf.
Rm. A, Contact: Drs. L. Fairbanks & E.Y.
Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for
Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251. Contact: Tom Disney, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ. Contact: Gerald L. Hansbro, M.D.
Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am - 8:30 am, Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium.
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Cont M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conferen
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesdays, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buchsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conferen
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Urology Conferences
Weekly Tuesdays, Room 2413 - Uropathology

ekly Tuesdays, Room D-335 -
nsultation
ekly Fridays, Room 3134 - Uroradiology
ese activities are a part of the CME
gram at the Veteran's Administration
dical Center

dical/Surgical GI Conference
& 3rd Mondays, 3:00 p.m., Rm. 3134,
ntact: Dr. Kozarek, Ext 413. Dr. Mertz,
493.

ncer Symposium
d Monday, 3:00-4:00 p.m., Rm T5,
ntact:
Byrne, Ext. 426.

hopedic Surgery Conference
d Monday, 7:30 a.m., Rm 3134, Contact:
Russo.

rgery - Pathology Conference
Monday, 4:00 p.m., Rm 3134, Contact:
Mertz & Dr. Lanard.

Grand Rounds
ekly, Tuesday, 1 p.m., Contact: Drs.
nowski & Schaffner, after GI Grand
unds, Rm. T-5.

**Radiology Clinical Correlation
nference**
and 3rd Tuesdays, 12:00 noon, Rm. T-5,
ntact: Dr. Sanowski.

Pathology Conference
d and 4th Tuesdays, 12:00 noon, Rm. T-
Contact: Dr. Sanowski.

ology Histopathology Conference
ekly Tuesdays, 8:00-9:00 a.m., Rm 2410,
ntact: Drs. Haddad & Kivirand, Ext. 417.

lmonary X-ray Correlation Conference
eekly Wednesdays., 12:30-1:30 p.m.,
om 4115, Contact: Dr. Rohwedder, Ext.
3.

rdiology Conference
d Thursday, 1:00 p.m., Room T-5,
ntact: Dr. Habib.

edical/Surgical Chest Conference
& 3rd Thursdays, 12:30 p.m., Rm. 4115
ntact: Dr. Rohwedder.

edical Service Grand Rounds
, 2nd, 3rd. & 5th, Fridays, 11:00 a.m.,
n. T-5, Contact: Dr. Zeller.

edical Mortality Conference
n Friday, 11:00 a.m., Room T-5, Contact:
. Zeller.

ology Conference
eekly Friday. 12:00-1:00 p.m., Room 3134,
ontact: Dr. Haddad, Ext 418.

scular Conference
d Friday, 8:00-9:00 a.m., Rm. 3134,
ontact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS DMINISTRATION HOSPITAL MEDICAL CENTER

escott, Arizona 86313. Contacts listed
elow. Approved for Category 1 credit.

edical Rounds.
t & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

urgical Rounds
h Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS DMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

01 South Sixtieth Ave., Tucson, AZ
723. Contacts listed below. Approved for
ategory 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for, Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m., Contact: Dr. Ewy.

Cardiology Non-invasive Conference
Weekly, Friday, 3:30 p.m., Contact: Dr. Ewy.

Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn, Contact: Karen Garcia.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact. Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC, Contact: Dr. J. Goldstone.

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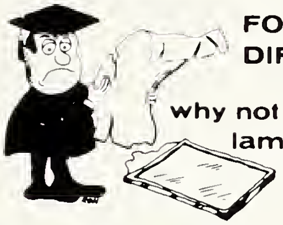

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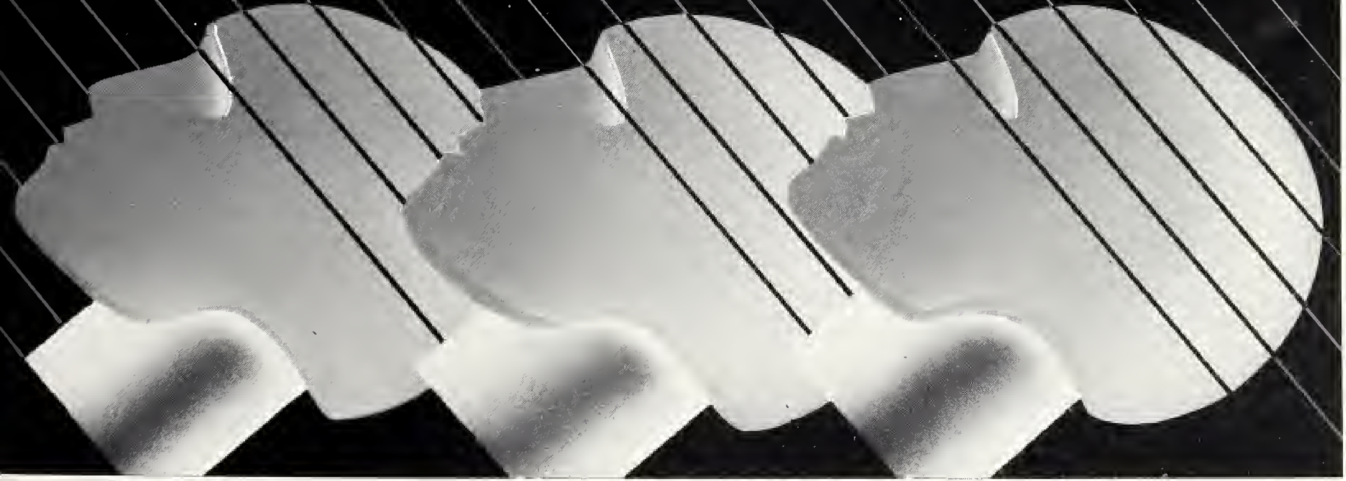

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ARIZONA MEDICINE

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JOURNAL OF ARIZONA MEDICAL ASSOCIATION

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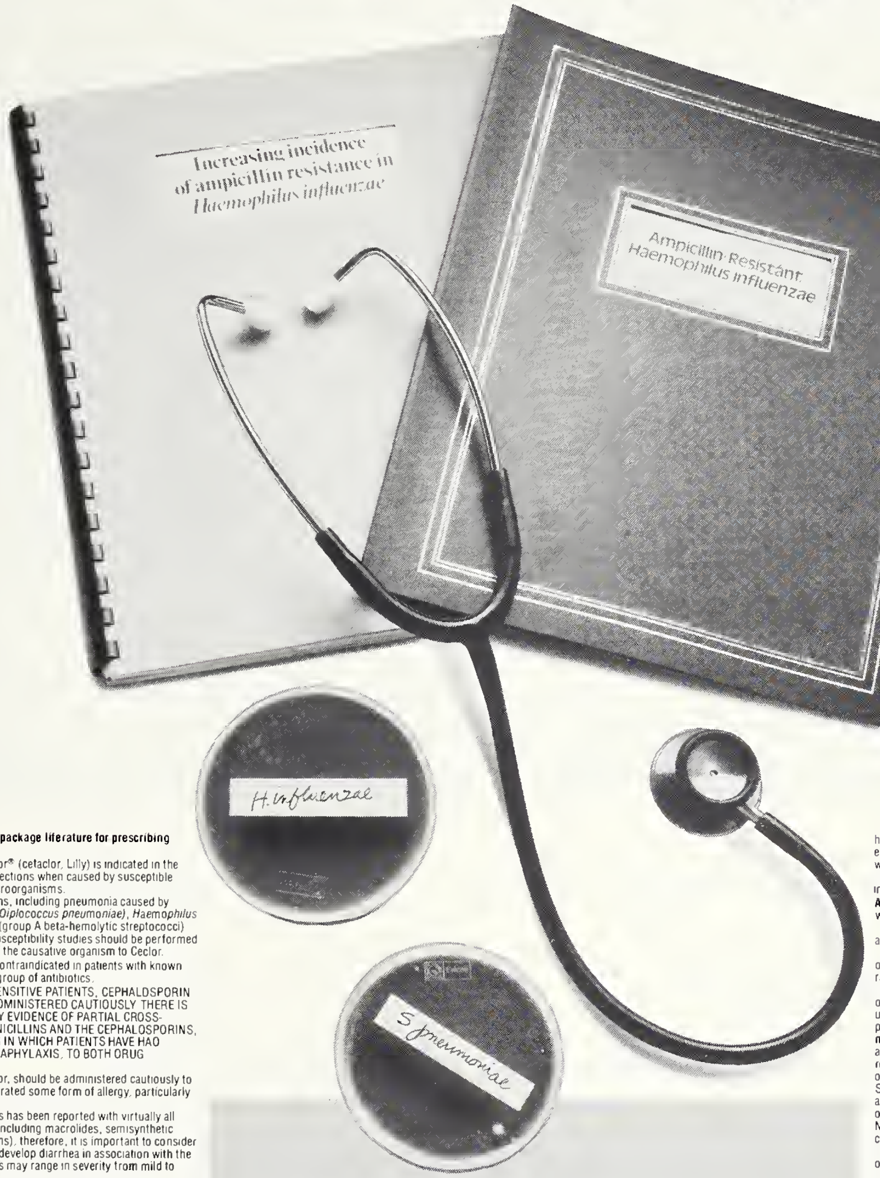
An added complication... in the treatment of bacterial bronchitis*


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

Ceclor®
cefaclor

Pulvules®, 250 and 500 mg

Brief Summary. Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms.

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile.* Other causes of colitis should be ruled out.

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest* tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy—Pregnancy Category *B*—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients)

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200)

[061782R]

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*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae.*[8]

Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information

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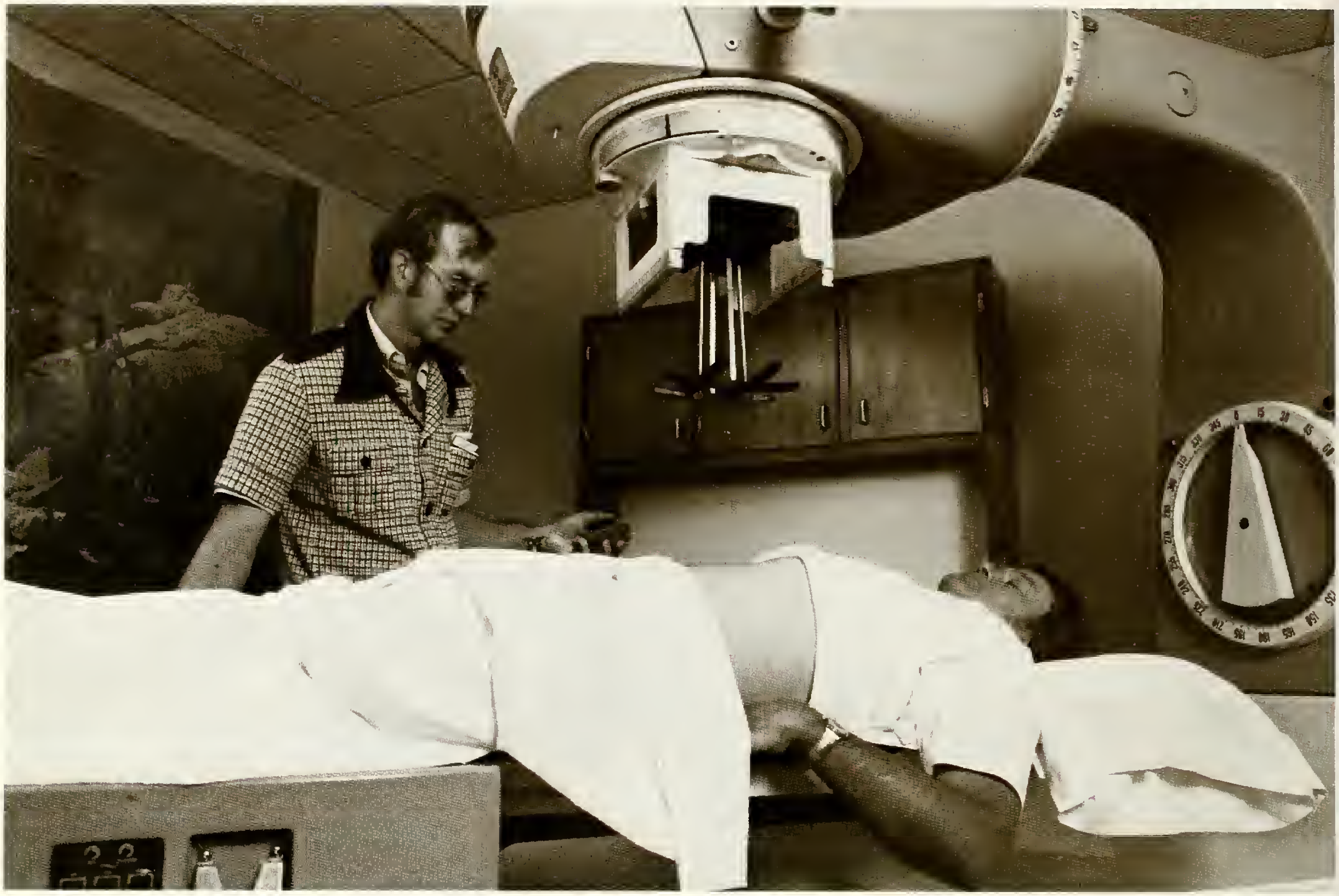

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Cardiology

The Use of Intracoronary and Intravenous Streptokinase in an Acute Myocardial Infarction

Experience From Two Community Hospitals

Dietmar Gann, M.D., F.A.C.C., F.A.C.P.
John Wilcox
and The Tucson Cardiology Research Group

Editor:
Kenneth B. Desser, M.D.

Intracoronary and Intravenous Streptokinase Study

Rentrop published his pioneering studies on the use of intracoronary streptokinase in 1979.[1]

This procedure became rapidly accepted by the medical community. The quick acceptance of the procedure was based on several factors:

1. Contrary to previous studies, occlusive clots in the coronary arteries could be demonstrated in greater than 90 percent of the patients with acute myocardial infarction. These clots could be effectively lysed with streptokinase.
2. Animal studies clearly showed that early reperfusion of an occluded artery in the heart can salvage potentially jeopardized myocardium.
3. Coronary angiography in the setting of an acute myocardial infarction can be performed safely.

Intracoronary streptokinase infusion in the setting of an acute myocardial infarction was started in June of 1981 in Tucson.[2]

The procedure was performed by the cardiologists a both St. Mary's Hospital and the Tucson Medical Center At this point, the true effectiveness and the safety of th procedure had not been established. Therefore, a grou of cardiologists in the community formed a researc group and established a specific protocol on the use o streptokinase. They also agreed to prospectively gathe specific data on all of those patients treated wit streptokinase. A fund from the local Heart Associatio was used in collecting the individual patient data.

Protocol

All patients with a clinical pattern consistent with a acute myocardial infarction with chest pain of usuall more than one-half of an hour, and with typical EK changes suggestive of an acute myocardial infarction were considered candidates for the use of intracoronar streptokinase. Relative contraindications to the use o the drug, itself, were recent surgery, recent strokes o bleeding problems. No patient was excluded because o his age. Only patients who were evaluated within les than three hours of the onset of chest pain wer accepted in this study.

After the patient was identified, usually in the emergency room setting, informed consent was obtaine from the patient, and if possible, the relatives. The patient was then moved directly from the Emergenc Room to the Cardiac Catheterization Laboratory. Laboratory.

In patients with an acute anterior wall myocardial infarction, the left coronary artery system was visualized first. In patients with acute inferior wall myocardial infarction, the right coronary artery was injected first.

After the occluded artery responsible for the acute infarction was identified, intracoronary streptokinase was injected usually at a continuous infusion rate o 4,000 units per minute. Some patients received 30,000 to 60,000 units intracoronary as a bolus at the beginning o the procedure. Usually every 15 minutes a repeat coronary angiogram was performed. Once the artery showed some lysis of clot and re-establishment of flow, the infusion was continued for another 60 minutes or until no further clotting substance could be demonstrated in the artery.

Subsequently, the rest of the coronary artery tree was studied. Left ventriculography was generally not performed.

At the time of the opening of the artery, the patient's chest pain usually quickly regressed and frequently ventricular arrhythmias appeared. In some patients with inferior wall myocardial infarction, transient complete or high degree A-V block and/or hypotension appeared.

During the first year of the study, all patients received 10,000 units of Heparin at the beginning of the cardiac catheterization followed by continuous Heparin drip after the streptokinase infusion was terminated. This policy was changed later on, and Heparin was not used any further in the immediate period before and after streptokinase infusion because of an increased number

---

From: The Tucson Cardiology Research Group, 5402 East Grant Road, Tucson, Arizona 85712. The following physicians are participants in the Research Group: George L. Beale, M.D., Edward W. Dick, M.D., David L. Lapan, M.D., Jose Laguna, M.D., Brendan Phibbs, M.D., Edward Byrne-Quinn, M.D., Jose Fernandez, M.D. Charles A. Katzenberg, M.D. and Richard J. McCarthy, M.D. Reprint request to Dietmar Gann, M.D., 5402 East Grant Road, Tucson, Arizona 85712.

f bleeding complications which were felt to be related the Heparin. However, all patients received Heparin fusion usually 12 to 24 hours after the streptokinase as given. After this time, the clotting parameters easured in the blood such as fibrinogen, thrombin me, and partial thromboplastin time had returned wards normal.

In the first 24 hours, CPK isoenzymes were drawn on a ree to four hour interval, and a CPK curve was stablished. An early rise in the CPK and a peak within e first 8 to 14 hours usually would indicate and confirm at reperfusion of an occluded artery had occurred. he peak of the CPK occurs usually at a range of 16 to 24 ours in patients where the artery remained occluded. A arious amount of nitroglycerin preparations, calcium hannel blockers were also given in the immediate llow-up period. To document the overall damage to e myocardium, the patients underwent an ejection action either by nuclear scan, echocardiogram or by epeat angiogram generally at least one week after the riginal infarction.

The usual time from the diagnosis of the myocardial farction to the actual coronary angiogram takes enerally at least one hour in an optimal setting. herefore, in April of 1982, the protocol was changed. atients with a diagnosis of acute myocardial infarction ow received in the Emergency Room setting, a bolus of 0,000 units of intravenous streptokinase and were then ken to the Cardiac Catheterization Laboratory. We oped with this approach to lyse the thrombus in the oronary artery earlier than was possible with the tracoronary method. Earlier reperfusion would opefully salvage more myocardium.

The goal of our study was to demonstrate:

1. The safety of the use of streptokinase given travenously or intracoronary or both.
2. Establish the effectiveness of the procedure in a ommunity setting.
3. Compare the intravenous with the intracoronary pproach and then, hopefully, develop some guidelines r the general use of thrombolytic agents in the ommunity.

esults

A total of 138 patients were treated with either tracoronary and/or intravenous streptokinase. Their ean age was 58.2 years (range 34 to 82), 108 patients ere male, 29 patients were female; 62 patients or 48 ercent that infarcted had single vessel disease; 39 atients or 28 percent had double vessel disease; 34 atients or 24 percent triple vessel disease; 77 patients or 6 percent presented with an inferior or inferolateral yocardial infarction; 61 patients or 44 percent with an nterior or anterolateral myocardial infarction.

The total hospital mortality was 12.3 percent or 17 out f 138 patients. For inferior myocardial infarction, the ortality was 7.7 percent, and in anterior wall yocardial infarction 16.6 percent. In 110 patients, the rtery successfully reopened; their mortality rate was 9.1 ercent or ten out of 110. In 28 patients, the artery remained closed; their mortality was 25 percent or seven out of 28. (Table 1). The difference in mortality was statistically significant ($p < 0.05$).

Table 1
Mortality

TOTAL	138 patients	17 (12.3%)—DIED
S:	110 patients	10 (9.1%)
U:	28 patients	7 (25%)

S: Successful opening of an occluded artery.
U: Artery remains closed (unsuccessful).

No patient was rejected because of age. A total of 40 patients were 65 or older. Of those 40 patients, ten died (mortality 25 percent); of 98 patients under the age of 65, seven died (mortality of 7.1 percent). (Table 2).

In 35 of the 40 patients over age 65, the occluded artery opened with streptokinase. Of those 35 patients, six patients died (mortality 17 percent); in five of 40 patients, the artery remained closed, and four of these five died (mortality of 80 percent).

Table 2
Mortality

Patients Age 65 and Over		
TOTAL:	40 patients	10 (25%)—DIED
S:	35 patients	6 (17.1%)
U:	5 patients	4 (80%)
Patients Under Age 65		
TOTAL:	98 patients	7 (7.1%)—DIED
S:	75 patients	4 (5.3%)
U:	23 patients	3 (13%)

S: Successful opening of an occluded artery.
U: Artery remains closed (unsuccessful).

There were 75 of the 96 patients under the age of 65 who had a successful opening of the artery; four of the 75 patients died with a mortality of 5.3 percent. In the remaining 23 patients, the coronary artery remained closed, and three patients died with a mortality of 13 percent.

No patient was rejected because of an unstable cardiac status, 21 patients (15 percent) were either severely hypotensive with a pressure of less than 80 mg. of mercury or in true cardiogenic shock with congestive heart failure at the time of the initial evaluation or during the cardiac catheterizations; eight patients were treated with an intra-aortic balloon, 13 with vasopressors only. In 16 of the 21 patients, a successful opening of the artery occurred with an opening rate of 78 percent. The mortality in this group was 38 percent or eight out of 21.

There were five patients who developed high degree A-V block requiring temporary pacing, two before streptokinase was given, and three during the cardiac catheterization.

Ventricular fibrillation occurred in eight patients before they received streptokinase. In seven patients, ventricular fibrillation developed while receiving streptokinase infusion or shortly thereafter. In this latter seven patients, ventricular fibrillation was felt to be a reperfusion arrhythmia. Ventricular fibrillation was corrected in all patients and did not add to the mortality.

During the last nine months of the study, all patients received prophylactically Lidocaine at the time that they received streptokinase. With this approach, no further ventricular fibrillation has occurred, and also the incidence of less complicated ventricular arrhythmias decreased substantially.

Bleeding problems occurred in 13 patients; nine patients showed a significant hematoma at the site of the femoral artery catheterization, and two of those patients developed an additional retroperitoneal hematoma requiring transfusions.

Severe pulmonary hemorrhage and death occurred in one patient after receiving 260,000 units of intracoronary streptokinase, 10,000 units of Heparin plus a continued Heparin drip immediately after streptokinase was given.

One patient developed an intracerebral hematoma two days after streptokinase was given, and also while on Heparin drip. Another patient was taken for bypass surgery immediately after receiving intravenous and intracoronary streptokinase, subsequently, exhibited a severe bleeding diathesis, bleeding into all organs and died.

Four patients developed a ventricular septal defect documented either by angiography or surgery. Two patients, who were operated on, survived. Two patients died from rupture of the ventricular free wall. Therefore, six patients had either ruptured the free wall or the ventricular septum. Two of these six patients developed the defect after a documented reinfarction. One, in the meantime, had triple coronary artery bypass surgery and occluded two grafts.

Follow-up

Short Term: Initial Hospitalization

A total of 18 patients developed reinfarction during the initial hospital stay. Thirty-eight patients underwent coronary artery bypass surgery and 11 patient transluminal coronary angioplasty. Therefore, 49 patients or 35 percent of all patients treated for acute myocardial infarction with streptokinase eventually ended up with surgery or angioplasty. The indications for surgery were usually severe triple vessel disease, and for angioplasty, a remaining severe lesion in a patient with single vessel disease.

Long Term:

The 121 hospital survivors were followed for a mean of 12.3 months (range 3 to 28 months); two deaths occurred. One patient died with carcinoma of the lung six months later, and another patient died suddenly at home six weeks after discharge.

The majority of patients who did not undergo bypass surgery were maintained on various amounts of coronary vasodilators plus dipyridamole, and aspirin (mostly on a prophylactic basis). Initially, all patient received Coumadin for six weeks. Later on, onl Persantine and aspirin were given.

Comparison of Intracoronary and Intravenous Streptokinase

The 138 patients were divided into three group

Table 3

	Group 1	Group 2	Group 3
No. of Patients	61	77	23
Successful Opening	44 (72.1%)	66 (86.1%)	20 (87%)
Mortality Total	9 (14.7%)	8 (10.4%)	1 (4.2%)
S:	(11.3%)	(7.6%)	
U:	(23.5%)	(13.9%)	
Pain to Therapy	2.84 (0.5-5)	1.72 (0.25-4)	0.63 (0.25-1)
Pain to Opening	3.55 (1.5-5.5)	2.45 (0.5-5)	1.54 (0.25-2.5)
Therapy to Opening	0.73 (0.25-2.25)	.87 (025-3.75	1.04 (0.25-1.7)

Group 1

Sixty-one patients received only intracoronary streptokinase.

Group 2

Seventy-seven patients received intravenous anc intracoronary streptokinase.

Group 3

Subgroup of Group 2; 23 patients received intravenous streptokinase within one hour of the onset o pain.

Group 1

A total of 61 patients received intracoronary streptokinase only. Fifty-eight patients showed completely occluded artery at the time of the coronary angiogram. Three patients exhibited high grade lesion in at least one artery. Of the total of the 61 patients, 4 either opened up a completely occluded artery o further improved flow in a highly narrowed artery. In 1 patients, the artery remained closed for a failure rate o 27.9 percent and a success rate of 72.1 percent.

The mean time from the onset of chest pain t receiving intracoronary streptokinase in this group wa 2.84 hours with a range from .5 to 5 hours. The mean time from onset of pain to the opening of the artery was 3 55 hours with a range of 1.5 to 5.7 hours. The mean time that it took from therapy to the opening of the artery was .73 hours with a range of .25 to 2.25 hours. The peak CPK in patients with reperfused arteries was reached at 13.37 hours; and in those patients where the artery remained closed, the CPK peaked at 21.25 hours. The opening rate for the various arteries was 78 percent for the left anterior descending coronary artery, 72 percent for the right coronary artery, and 57 percent for the circumflex coronary artery. The overall hospital mortality in this group of 61 patients was 14.7 percent or nine patients died during the initial hospital stay.

roup 2

This group of patients received initially intravenous eptokinase followed by intracoronary streptokinase if e artery was occluded at the time of the angiogram. ne usual intravenous dose was 250,000 units. This was ven in 50 cc's of normal saline over ten minutes. This oup consisted of 77 patients. The success rate was 86.1 ercent, and the failure rate was 13.9 percent.

The time from onset of pain to receiving intravenous reptokinase was 1.72 hours, and the time from the nset of pain to the opening of the artery was 2.45 hours, nd the time from receiving therapy to the opening of e artery was .87 hours. The exact timing for the pening of the artery was not always possible. A fair umber of patients had already opened an artery at the me of the coronary angiogram. Presumably, they pened with intravenous streptokinase alone.

The opening was felt to have occurred when chest ain suddenly decreased, and also when the ST segment levations regressed substantially and when significant entricular arrhythmias appeared. The reopening was onfirmed with CPK isoenzyme curves. The peak CPK ccurred at 11.83 hours in reperfused arteries and in the 1 patients where the artery remained closed, the CPK eaked at 20.9 hours. The overall success rate of opening f the various arteries was 92 percent for the left anterior escending coronary artery, 80 percent for the right oronary artery, and 72 percent for the circumflex rtery. The overall mortality in this group was 10.4 ercent or eight out of 77 patients.

roup 3

Out of the latter group of 77 patients who received ntravenous and intracoronary streptokinase, we reiewed the patients who received intravenous strepokinase within one hour of the onset of chest pain. A otal of 23 patients were found.

Thirteen of the 23 patients were found to have an lready open artery at the time of the initial angiogram. resumably the artery had opened with the intravenous treptokinase only. Therefore, the success rate with ntravenous streptokinase was 56.5 percent if given vithin one hour of onset of pain. An additional seven atients opened the occluded artery with intracoronary treptokinase. The overall success rate in this group was herefore 87 percent or 20 out of 23 patients. The time rom onset of chest pain to the intravenous use of treptokinase was .63 hours, and the time from onset of ain to the opening of the artery was 1.54 hours. The ime from the onset of therapy to the opening of the rtery was .94 hours.

The CPK in the reperfused patients peaked at 10.5 ours. None of these patients died initially from the cute infarction. One patient, who subsequently underwent bypass surgery of the right coronary artery, died eight days after the surgery after the closure of the ypass graft. This was the only death in this group.

Discussion

Coronary Care Units have helped reduce complications associated with myocardial infarction. The present conventional treatment has done little, if anything, to salvage myocardium in patients with acute myocardial infarctions. Animal studies have established a time course of necrosis in acute myocardial infarction.[3] This time course is related to blood flow. A total interruption of flow results in necrosis of the myocardium in as short a time as 30 minutes. If the resting blood flow is reduced to five to ten percent of normal, ultimate necrosis occurs in two to three hours. A 15 percent flow may allow survival of the myocardium for a prolonged period of time. The time course of necrosis in human myocardial infarction varies tremendously, but maximal damage usually occurs within two to six hours after the coronary artery occludes completely. While it is probably impossible to intervene early enough to salvage the myocardium with zero blood flow at the onset of infarction, remaining low perfused myocardium can be restored to normal function if blood flow is established within hours of the onset of pain.

Recent studies have clearly demonstrated the presence of an occlusive thrombus in the vast majority of patients with an acute myocardial infarction.[4] The thrombus is usually superimposed on a preexisting arteriosclerotic plaque. The surface of this plaque that is usually covered with endothelium becomes denuded and this starts the process of platelet aggregation and thrombus formation. The mechanism of the denudation process is not clear. Spasm of the coronary artery at the level of the plaque and subsequent rupture of the plaque material through the endothelium is one of the postulated processes involved. The preexisting arteriosclerotic plaque may cause severe narrowing of the coronary artery and produce angina. At times, the plaque results in a noncritical obstruction. This latter situation could explain the development of an acute myocardial infarction without prior symptoms.

Our study has confirmed reports that cardiac catheterization can be performed safely during an acute myocardial infarction. No deaths can be attributed to the procedure, itself.

The use of streptokinase carries the risk of bleeding. The main bleeding problems are related to site of the catheter insertion.

The bleeding incidents can be reduced by leaving an intra-atrial catheter in the femoral artery for a 24 hour period until the clotting parameters have recovered towards normal. Also bleeding appears to be reduced if concomitant use of high dose intravenous bolus therapy of Heparin is avoided. All our patients that required transfusions had initially also intravenous Heparin given in a bolus of 10,000 units. One patient, with a severe intrapulmonary hemorrhage, had received 10,000 units of Heparin at the time with streptokinase and then immediately continued on an intravenous Heparin drip. The use of 250,000 units of streptokinase alone will reduce fibrinogen levels below 50 mg. percent in the majority of the patients. The thrombin time usually will at least double or triple normal. Both changes persist frequently for 12 to 24 hours. Therefore, at the present time, we delay the use of Heparin drip at least for 12 hours after the streptokinase has been given.

One patient had developed an intracerebral bleeding two days after bypass surgery. He had received streptokinase one day before bypass surgery; we are not sure if the bleeding was related to this.

Another patient was taken to the operating room immediately after receiving 470,000 units of streptokinase because of a very unstable pattern. He developed severe bleeding problems afterwards, bled in all organs and died.

It is our policy now that we wait, if at all possible, at least for 24 hours after the streptokinase has been given before we send anybody to surgery. None of the presently published articles on the use of streptokinase in myocardial infarctions mention bleeding complications as serious problems even if bolus injections of 1.5 million units of streptokinase are used.

Hemorrhage into an infarcted myocardium after reperfusion and subsequent possible infarction extension has been feared as another complication. Recent animal studies indicate that hemorrhage after reperfusion occurs only in areas with severe necrosis.[5] Extension of the infarction secondary to hemorrhage does not occur. It is not known if streptokinase increased the amount of hemorrhage in the reperfused myocardium.

Four of our patients developed an acute ventriculoseptal defect, and two left ventricular wall rupture. Two of the total of six patients with ventricular rupture developed the rupture after reinfarction, and not related to the initial streptokinase infusion. One of these patients had, in the meantime, undergone triple coronary artery bypass surgery. Therefore, only in four patients can the ventricular rupture be attributed to the initial infarction and streptokinase infusion. Fifteen to twenty-five percent of the patients dying with myocardial infarction and treated conventionally without streptokinase infusion demonstrate rupture of the ventricular septum or the free wall.[6] The incidents of ventricular rupture in our patient population falls within these percentages. Therefore, we do not feel that ventricular rupture occurs more frequently with the use of streptokinase. In none of the multiple European studies on the use of intravenous streptokinase in acute myocardial infarction, was ventricular rupture mentioned as potential complication.[7]

Intravenous streptokinase, if given within the first hour of onset of pain, reopened an occluded artery in 56 percent of the patients. This is documented by a subsequent arteriogram and by CPK isoenzyme curves. The earlier the artery opens, the more likely the reduction of infarct size occurs, and the more likely that we will be able to decrease the mortality associated with myocardial infarction. Reduction of infarct size is difficult to demonstrate; and in the limited number of studies available, it would indicate that there is some improvement of the ejection fraction in the group which the artery opens. Our study was not designed to prove o to disprove this point because initially we felt that it ma be unsafe to perform a left ventriculogram during th acute infarct process, however, multiple studies in th meantime have shown that this seems to be no problem

Our group of 23 patients that received intravenou streptokinase within an hour of the onset of chest pain had initially a zero mortality from the acute infarction One patient died later, still within the same hospital stay after he had undergone bypass surgery and developed reinfarction. The total hospital mortality is four percen in this group for early perfused patients, and it i statistically significantly lower from 14.7 percent in ou patients who received intracoronary streptokinase (P< 0.5). We feel reperfusion and salvage of potentially jeopardized myocardium contributed to the low mortality in this group of patients. The time from onse of chest pain to opening of the artery was 1.54 hours in this group who received intravenous streptokinase within an hour of the onset of pain. In our patients treated with intracoronary streptokinase only, the time from onset of chest pain to reperfusion was 3.5 hours.

Early use of intravenous streptokinase appears, therefore, to be the most promising approach. The streptokinase infusion should be given as soon as the diagnosis of a myocardial infarction is established with the usual criteria of chest pain, and the EKG changes. Because time is a critical factor, we believe that the physician treating the patient, initially, should be the one ordering the streptokinase.

Our standard intravenous dose was 250,000 units of streptokinase, and we gave it in a bolus form over five to ten minutes diluted in 50 cc's of normal saline. Much higher doses of streptokinase have been used by others.[6] At the present time, the optimal dose is not established, but 250,000 units is probably the minimum amount that should be used.

Intravenous use of streptokinase is not as effective as intracoronary streptokinase. Successful opening with intravenous streptokinase alone occurred in about 56 percent of the patients if given within one hour of the onset of pain. An additional 31 percent of the occluded vessels reopened subsequently with additional intracoronary streptokinase use. Therefore, the combined success rate of reopening of an occluded artery with intravenous and intracoronary streptokinase is 87 percent.

Additional benefits are obtained from a coronary angiogram taken during the acute infarction process:

A. It identifies the patient with triple vessel disease, left main disease that subsequently would benefit from coronary artery bypass surgery.

B. It identifies the patient with a single vessel disease and remaining severe obstruction who may become a candidate for coronary angioplasty.

C. Knowledge of the coronary anatomy allows us to modify our subsequent treatment plan and may allow us to reduce hospital stay and to reduce expenses. A atient with single vessel occlusion and successful eopening with the streptokinase who only has ıoderate obstruction left, can probably be safely ischarged within four to five days after the infarction.

We believe that the knowledge of the anatomy and ıe course of action based on this knowledge, ıbstantially contributed to the extremely low and nexpected morbidity and mortality of the first year ollow-up period. Only one patient of the 121 surviving ischarged patients died suddenly approximately six eeks after discharge. There were no other cardiac eaths in this group. None of the patients developed a einfarction.

Patients with triple vessel disease or left main disease ere usually sent to surgery during the initial ospitalization, from two to three hours to ten days after ıe initial myocardial infarction. A total of 38 patients nderwent coronary artery bypass surgery. Eleven atients with single vessel disease and remaining tightly arrowed arteries underwent successful transluminal oronary angioplasty. We believe that this fairly ggressive approach has been responsible for the xtremely low morbidity and mortality in the first year ost infarction.

In the total study group of 138 patients, the overall nortality was 12.3 percent, or 17 out of 138 patients died. he mortality was 9.1 percent in 110 patients where the ccluded artery was successfully opened with treptokinase and was 25 percent (7 of 28 patients) where he artery remained closed. The mortality in those atients that reopened the occluded artery was, herefore, less than one half in all of the patients studied. his difference persisted for all subgroups of patients uch as patients with inferior wall myocardial infarction, nterior wall myocardial infarction, Class I or Class IV, ver 65 years of age or under age 65.

There is no age limitation for the use of streptokinase. he expected mortality from a myocardial infarction in atients over the age of 65 is substantial and varies from 5 percent to 30 percent. The reduction of infarction nortality in this older age group may actually be higher han in the younger age group. Forty patients were 65 ears or older. Thirty-five of those forty patients uccessfully opened the artery with streptokinase; their nortality was 17 percent. In five of the 40 patients, the rtery remained closed; and four of those five died, with mortality of 80 percent.

Conclusion

The use of intravenous and intracoronary streptokinase is an effective treatment to dissolve an occlusive thrombus responsible for the vast majority of acute myocardial infarctions. The risk of serious leeding problems is low if the concomitant use of high dose Heparin is avoided.

Intravenous streptokinase alone given within an hour of onset of the chest pain opens 56 percent of occluded arteries. Additional intracoronary streptokinase will open another 31 percent of occluded arteries for a total success rate of 87 percent.

The hospital mortality of the patients with successful opening of an artery is less than one half compared to those where the artery remains closed.

Coronary angiogram during the acute infarction identifies patients at high risk for subsequent cardiac events that may benefit from either bypass surgery or coronary angioplasty, therefore, may reduce the incidence of reinfarction and mortality during, at least, the first year of follow-up.

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Editorial Comment

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The article by the Tucson Research Group representing results of intravenous and selective coronary streptokinase infusion in patients with acute myocardial infarction is a noteworthy contribution to literature on the subject. Such data generally evokes certain queries by physicians and a few can be enumerated as follows:

1. Does the evolution of Q waves on the electrocardiogram indicate therapeutic failure? Answer: No. These patients are acknowledged to have already developed an acute myocardial infarction. The thrombolysis results in resolution of S-T segment elevation and reduces the extent of injury.

2. Has this technic altered the usual format for hospital admission and performance of a complete history and physical examination? Answer: Yes. Proper timing is critical in this setting. After informed consent is obtained a systemic questionnaire is utilized in order to identify any contraindications to systemic fibrinolysis. In many institutions the formal admission history and physical examination is dictated after the patient is transferred from the catheterization laboratory to the coronary care unit.

3. Are we creating arrhythmias? Answer: Yes. The onset of reperfusion arrhythmia is taken as an indication of successful therapy.

4. Is there a relationship between the extent of coronary artery disease and inability to lyse the clot? Answer: Yes. Recent data suggests that those arteries with almost totally occluding atherosclerotic lesions and poor run-off are those which may not respond to thrombolysis, or if they are reopened, they frequently rethrombose.

5. Can intravenous administration of streptokinase be justified prior to coronary angiography? Answer: Yes. Conservative estimates from collected series show that there is an eight out of ten chance that there will be a clot in the suspect artery. Should such a clot not be demonstrated it is still possible that the tiny nidus which initiates largely thrombus formation may be dissolved by the streptokinase, thereby preventing further injury.

6. Is there a drug which can selectively lyse formed clots without resulting in systemic defibrination and all the potential complications outlined in the current study? Answer: Yes. The acylated form of streptokinase shows promise for the lysis of a formed fibrin mesh while at the same time not resulting in a generalized state of fibrinogenolysis.

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Dermatology

Delusions of Parasitosis

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A patient with delusions of parasitosis has a erroneous and unshakable belief that his skin is infeste with some parasite such as mites or insects. The patien may bring the "parasites" for the physician to see evidence consisting of tiny pieces of thread, lint scrapings, and debris of all sorts. The deluded patien often has hallucinations, insisting that he can see an feel the parasites within his skin.[1] This condition cause distress to patient and therapist alike. There must be n doubt that the complaint is delusional in nature. If th patient comes to the psychiatrist complaining of

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arasitic infestation that is not obvious, the psychiatrist hould obtain a dermatologic opinion. Usually though, ne patient is seen first by a dermatologist who cannot nd evidence of infestation and who may then ask for a sychiatric consult. These patients are very angry that no hysician will believe them and usually will refuse any sychiatric explanation and intervention.

Usually the patient gives a detailed description of how he supposed parasite has been caught in the act of urrowing, biting, or otherwise harming the patient. he patient may well have already called in the health uthorities to disinfest his house on more than one ccasion. The skin may appear normal, but there is sually evidence of picking or scratching and sometimes ermatitis from the strong antiseptics which have been sed to try to get rid of the organisms.[2]

Discussion with the patient usually discloses the ollowing identifying data.[3]

1. The supposed "infestation" may have lasted for wo or three months or even longer. Arthropod nfestations rarely last so long.

2. The patient may be so positive of his infestation, nd gives such a lucid description, that his family, even hough knowing that they are not infested, may believe he patient's infestation.

3. The patient may move to another location to get way from the parasitic infestation, but usually the arasites appear in the new home.

4. "Bites" which develop on the skin sometimes itch nd cause the patient to scratch himself, often leading to eep excoriation.

5. The patient will complain of sensations which vary rom simple pruritus to biting, gnawing, crawling, or urning.

6. The "parasites" sometimes jump around.

7. The "parasites" may infest the patient's hair and may be shaken or combed onto a towel, sheet, or ewspaper.

8. The "parasites" are black or white when first seen and later on may change color.

9. The "parasites" may come out of common household products like toothpaste or cosmetics.

The typical patient is a middle age or elderly female who may have had scabies or louse infestation or may have experienced an unassociated pruritus or dermatitis. Nevertheless, the delusion may appear without such skin disorders. In a study of five patients by Paulson and Petrus,[4] the range of intelligence was from borderline to high average, with a mean average IQ within normal limits. In the same study, all but one patient showed a general personality trait that was slightly introversive in direction, with some social isolation and distancing of the self from potentially anxiety arousing interpersonal relationships.

Spontaneous remission is rare. However, remission may occur and not be reported to the dermatologist, while also the patient may become disillusioned with physicians and fail to keep appointments while still afflicted.

The incidence of the disorder is unknown and hard to assess because some patients refuse to attend hospitals, but it is probably more common than published work would suggest. Schrut and Waldron[3] saw more than 100 cases in five years. Wilson and Miller[5] reviewed 51 case histories, and Wilson[6] described 34 more patients six years later.

It is needed to differentiate between psychotic and neurotic disorders. The neurotic disorders are those cases in which there is a persistent fear of parasitic infestation but the patient knows that he is free of it. This is a type of phobia. Delusions of parasitosis is a psychotic disorder probably with affinities to paranoia. Most of these patients do not actually fear infestation and thus the term delusions of parasitosis is preferable to the older term acarophobia. These types of disorders in the Scandinavian and German psychiatric literature are included in the monosymptomatic hypochondriacal psychosis.[7] These are characterized by the patients' unshakable belief that some part of his health status, physiology, or anatomy is not normal, despite evidence to the contrary. A striking feature of these patients is that the personality is otherwise well preserved and usually there is little other evidence of psychosis. The term "monosymptomatic hypochondriacal psychosis" is seldom used and the number of patients seen by a psychiatrist is small. Many of these cases do not see a psychiatrist because the dermatologist is not eager to refer a patient who is so antagonistic to medicine in general and psychiatry in particular.

Dermatologic psychosomatic disorders are divided into three groups: The primary group in which the emotional disorder is the primary disease and the cutaneous disorder part of its expression; the secondary group in which the basic cause of the disorder is organic and affects the patient emotionally to various degrees; and the collaborative group in which the organic cause and emotional disorders combine in different degrees to cause the skin disorder.[8] Delusions of parasitosis falls under the primary group.

Delusions of parasitosis can also be seen secondary to a toxic psychosis or be part of a major psychosis such as a severe depression with risk of suicide, or schizophrenia. If the delusions of parasitosis are secondary to a toxic psychosis, patients need no special treatment for their cutaneous delusions, but require general medical and psychiatric care directed toward the cause of their mental disorder, whether it be the effect of some drugs, alcoholism, pellagra, or fever. The role of the dermatologist in these cases is to rule out other causes of pruritus that may contribute in some way to the delusion. In this toxic group the history is likely to be short, the patient is clinically ill and may be disoriented and delirious.

Delusions of parasitosis in schizophrenic patients usually are just a small part of the total picture, and the patient should be treated by a psychiatrist. If the patient is depressed, the treatment should be towards the depression.

Tullet[9] studied eleven patients with delusions of parasitosis. All had well preserved approachable personalities but reacted to the delusion in different ways. Four patients had energetic obsessional personalities. These are the more ruthless, thorough cleansers and excoriators; their behavior appearing more obviously abnormal because of their strenuous efforts. Two patients reacted with anxiety and depression and one seemed to be settling down to a quiet acceptance after the initial anxiety and disbelief.

Evidence is accumulating that monosymptomatic hypochondriacal psychosis may respond specifically to pimozine treatment. Pimozine does not cure delusions of parasitosis but keeps the symptoms in remission. In several of the cases studied by Munro,[7] the patients stopped taking the pimozine and symptoms returned; nevertheless, pimozine treatment may represent an important advance in the treatment of delusions of parasitosis, a condition that has been regarded as virtually untreatable. To date it is not known when this drug might become available in the United States.

Pimozine is a relatively new neuroleptic and the first clinically available representative of the diphenylbutyl piperidines. Diphenylbutyl piperidines are a group of medicines closely related to the butyrophenones (an example of which is haloperidol). Until recently, the main use of pimozine has been in schizophrenia treatment, especially in schizophrenics who have severe apathy and inertia. This drug is given in relatively low dosage compared to other neuroleptics, and it is relatively free of serious side effects, though Parkinson's symptoms and over alerting (or paradoxically in some patients, inertia) have been seen. It is best administered as a single morning dose to minimize effects on sleep.

Pimozine does not appear to work in neurotic rather than psychotic patients; indeed, it may make neurotic patients worse. Therefore, it is important to get a psychiatric opinion in these cases. Munro[7] has seen eleven patients with monosymptomatic hypochondriacal psychosis, six of whom have had delusions of parasitosis, improved markedly with pimozine. He suggests that all cases confirmed as having delusions of parasitosis are worthy of a clinical trial with pimozine. The optimum dosage has to be found experimentally for each patient, but usually lies between 2 mg and 8 mg daily.

It is our opinion that these patients should be referred to a psychiatrist for proper antipsychotic medication but usually they are reluctant to see a psychiatrist and the dermatologist might be the only physician the patient will go to. Since the chief complaint of these patients relates to the skin, usually they continue seeing the dermatologist. The dermatologist can establish a therapeutic relationship and may consider both the psychological and physical aspects of the disorder. In these cases, Gould and Gragg[10] consider the following set of guidelines to be a starting point in developing an approach to the patient with delusions of parasitosis:

1. Be certain of the diagnosis.

The diagnosis is usually not hard. True parasit infestations and systemic disorders must be ruled out v the history, physical exam and laboratory tests.

2. Listen carefully to the patient's story.

The physician should listen to the patient in nonthreatening and nonjudgmental way, so the patier will feel that he has found someone who is intereste and in whom he can trust. It is futile to try to talk th patient out of his belief; the patient needs the symptom and will hold on to them.

3. Ask the patient how the condition has affected h life.

Asking this question will inform the physician on th areas where further gentle investigation will b beneficial. These further questionings will lead th patient to talk about real problems and not about th imagined parasites, but these patients usually retur repeatedly to the subject of the parasites. However clinical improvement may be achieved even while th patient still thinks that he is infested. Nevertheless, th physician should draw the patient's thoughts away from the imagined infestation.

4. Work to establish a positive bond with the patient

A good doctor/patient relationship may influence th patient towards a positive direction. These patients ar very sensitive to any attitude of disinterest or a belief o the part of the physician that no help is possible. Usuall these patients make their way from physician t physician demanding help and rarely feeling satisfied.

5. Be alert to any area in which the patient will allow help.

An alert physician will notice clues sent by the patien to certain situations in which the patient would lik positive suggestions or specific guidance.

6. Try to reduce the patient's sense of isolation.

Usually these patients are isolated individuals. One o the reasons is that they are caught up and absorbed i their disease and may feel at odds in the presence o others. Another reason is that they feel that other peopl look at them as emotionally unstable. Another reason i that they may feel their disease is contagious. Th physician should be aware of this and help. Just listening to the patient's problems will usually reduce this sense o isolation. A physician who will not listen to the patient' problems has little chance of helping this patient.

7. Consider the use of medicine to decrease th patient's anxiety and/or psychotic thinking.

Using the correct medication is the simplest and leas time-consuming way to decreasing the patient's anxiety and tension. Anti-anxiety agents may relax the patien and make him more cooperative. Antipsychotics should be used to decrease the patient's psychotic thinking.

The choice of medicine to be used may be made by the physician's past experience with a particular drug The patient himself may give the physician informatior about a particular drug that was effective in the past Psychiatric consultation should be obtained if there is any uncertainty regarding medication or dosage.

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Gastroenterology

Disorders of Esophageal Motility —
Diagnosis and Treatment

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With the proliferation of esophageal function testing, and the clarification of motility disturbances, confusion may develop in the mind of the clinician charged with he care of these patients. This brief review provides the physician with the current status of the diagnosis and herapy of patients with esophageal motor disorders.

Motor disorders of the esophagus are caused by disruption of the neural, hormonal, or muscular control mechanisms of peristalsis and the lower esophageal sphincter (LES). The most common motor disorder is gastroesophageal reflux disease (GERD) consisting of a constellation of symptoms and mucosal damage caused by the contact of gastric juice with the esophageal mucosa.[1] Symptoms include heartburn, regurgitation, and hematemisis. Regurgitation of liquid or bitter material in association with heartburn is termed pyrosis. Dysphagia becomes a symptom of GERD with stricture formation. An upper gastrointestinal barium series will rule out other pathology and endoscopy is not suggested for the evaluation of uncomplicated GERD. Treatment with antacids, H_2 blockers, elevation of the bed head, and modification of dietary and smoking habits are indicated[2] (Table 1).

Table 1
Agents Affecting GERD

Improve	**Worsen**
Antacids	Anticholinergics
H_2 Blockers	Xanthines
Metaclopramide	Nicotine
Bethanochol	Fatty foods

For those patients who fail to respond to this initial treatment or who present with atypical symptoms, many diagnostic tests have been described. These include: esophageal manometry, acid perfusion test (Bernstein), endoscopy with biopsy, double contrast barium esophagram, standard acid reflux test (SART), gastroesophageal scintigraphy, and 24-hour pH monitoring. The test of choice depends on availability; however, gastroesophageal scintigraphy and 24-hour pH monitoring are highly sensitive and specific.[3] (Figure 1). Failure to respond to initial medical therapy or development of pulmonary or bleeding complications requires further evaluation, including upper gastrointestinal endoscopy and possible biopsy. Five to ten percent of those with documented reflux esophagitis fail to respond to aggressive medical therapy and surgical intervention may be indicated.[3]

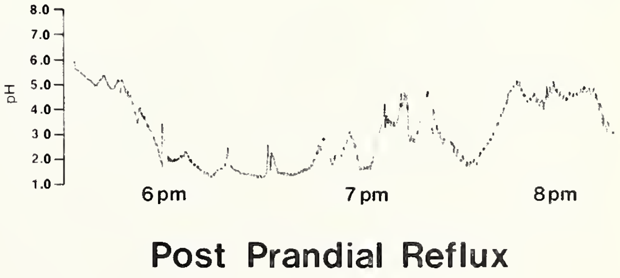

Figure 1
A portion of a 24-hour Ph recording illustrating post prandial reflux in a 56-year-old man with esophagitis.

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Many esophageal motor disorders which have been described (Table 2) can now be defined by esophageal manometry. Pathognomonic motility changes have been identified in scleroderma and achalasia. In scleroderma the upper third of the esophagus consisting of straited muscle is usually normal. Peristalsis is absent in the lower two thirds of the esophagus consisting of smooth muscle, and the LES pressure is absent or greatly diminished. (Figure 2). Reflux strictures and symptoms of dysphagia are common.[4] Anti-reflux therapy and esophageal dilation benefit many of these patients.

Table 2
Conditions Associated with Abnormal Esophageal Motility

- Scleroderma
- Achalasia 1° and 2°
- Diffuse esophageal spasm
- Nutcracker esophagus
- Musculo skeletal disorders
- Hypertensives LES
- Acid induced motility disorders
- Diabetes mellitus
- Presby-esophagus
- Intestinal pseudo-obstruction

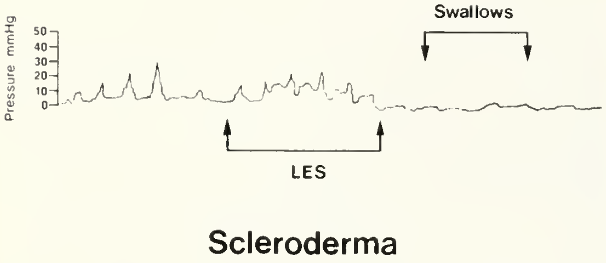

Figure 2
A motility tracing from a 53-year-old man with scleroderma and dysphagia.

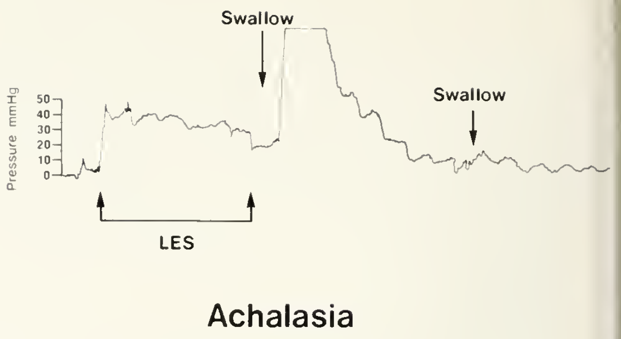

Figure 3
A motility tracing from a 61-year-old man with dysphagia a regurgitation who responded to balloon dilation.

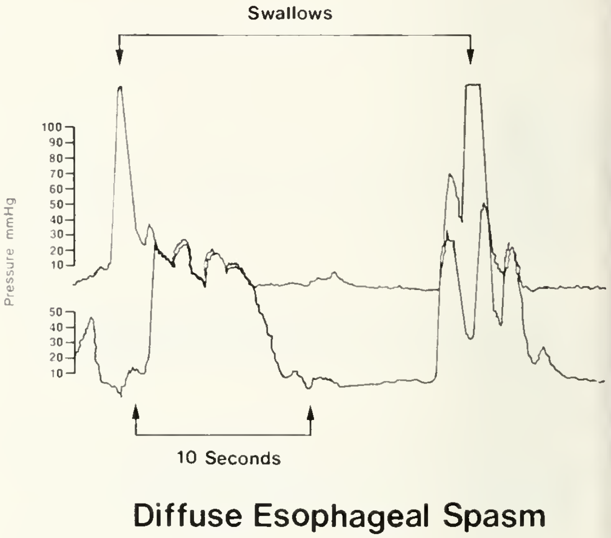

Figure 4
This tracing is from a 76-year-old man with substernal ches pain.

Manometrically achalasia is characterized by three abnormalities; aperistalsis of the esophagus, incomplete relaxation of the LES, and increased resting LES pressure. (Figure 3). While the etiology of this disease is not clear, it may be classified as idiopathic or may be associated with Chagas' disease and carcinoma of the cardio-esophageal junction. Achalasia has also been described in association with distant tumors.[5,6] Symptoms include dysphagia to solids and liquids, weight loss, and substernal pain. Nocturnal coughing secondary to regurgitation and aspiration is frequent. Therapy is directed towards the hypertensive LES with pneumatic balloon dilation. Good results are achieved in 80% to 90% of patients, and surgical myotomy is indicated for nonresponders.[7]

Diffuse esophageal spasm (DES) is difficult to classify manometrically. The hallmark of this condition is repetitive nonperistaltic contractions of increase amplitude and duration. (Figure 4). The chest pain o DES is often indistinguishable from angina pectoris an coronary artery disease must be ruled out. Thes patients may respond to bougienage, nitrates, an calcium channel blockers.[8]

Achalasia and DES represent opposite ends of th spectrum of esophageal motor disorders. Others ar characterized by nonspecific abnormalities of peristalsi and the LES mechanism. These are grouped togethe and classified as nonspecific esophageal motilit disorders (NEMD).[9] Vigorous achalasia, acid induce motility disorders, motility disorders in the diabetic o elderly patient, and patients with chronic idiopathi intestinal pseudo-obstruction are all included in thi group.

Recently the entity of the "nutcracker esophagus" ha een described and is characterized by high amplitude eristaltic contractions (> 200 mm Hg), and is associated ith chest pain, dysphagia, and prolonged esophageal ansit time.[9,10] (Figure 5). Treatment is similar to that for ES.

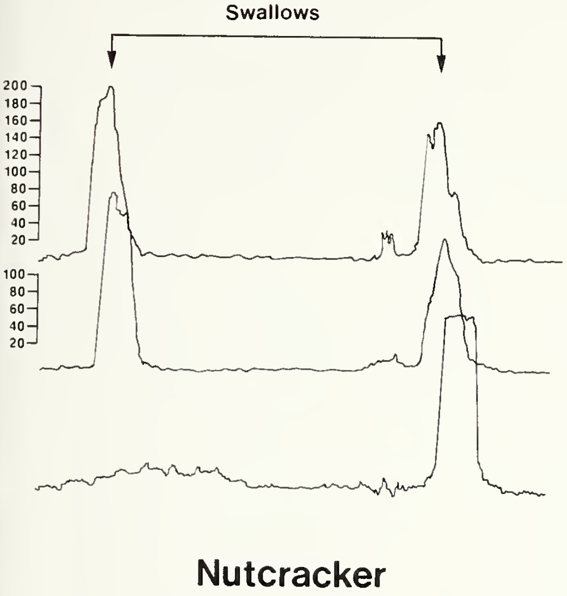

Figure 5
This tracing is from a 60-year-old asymptomatic man.

Muscular abnormalities involving the proximal third the esophagus are associated with dysmotility. These clude dermatomyositis, polymyositis, myotonia strophica, muscular dystrophy, thyrotoxic myopathy d myasthenia gravis. Here the oropharyngeal muscles e also affected and nasal and tracheal aspiration are mmon. Therapy is directed toward the underlying sease.

Table 3
Manometric Criteria for Esophageal Motor Disorders

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cleroderma
1. Low or absent LES pressure.
2. Decreased or absent peristalsis in the distal esophagus.
3. Normal upper one-third of the esophagus.

chalasia
1. Elevated LES pressure (>30 mmHg).
2. Incomplete relaxation of LES.
3. Aperistalsis in the body of the esophagus.

iffuse Esophageal Spasm
1. Repetitive nonperistaltic contractions.
2. Increased duration (>7.5 sec.) and amplitude (>200 mmHg) of contractions.
3. LES abnormal in one-third of patients.

utcracker Esophagus
1. Normal peristaltic contractions.
2. Increased amplitude of contractions (>200 mmHg).

With the recent advances in esophageal motility testing it is necessary for the physician to understand the underlying pathophysiology. He is then able to direct therapy in an appropriate and effective manner. Dysphagia with attendant aspiration is a serious and troublesome symptom. Current therapy is designed to relieve this and avoid the complications.

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Infectious Diseases

Infectious Disease:

New Organisms, New Diseases and Expanding New Antimicrobial Agents

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Introduction

Infectious disease has recently become a particularly progressive subspecialty in medicine with the discovery of new infectious agents, the recognition of new syndromes caused by known microorganisms, the development of new immunizing vaccines and antisera, and the introduction of unique classes of antimicrobial agents.

Against this background of progress the problems of AIDS, the socially important epidemic of Herpes simplex, Type 2 virus infections and the burden of infectious disease in the developing countries point up the problems yet to be solved.

This brief review is intended to summarize some of the recent advances in infectious disease and to point out areas where additional progress is either uniquely needed or potentially imminent.

New Infectious Agents

1. Legionnaire's Disease[1,2,3]

An epidemic of pneumonia occurred amor American Legion members attending their annu meeting in a Philadelphia hotel in 1976. After extensi investigation the etiologic agent, *Legionella pne mophila*, was identified by use of intensive stainir techniques. The organism is a small gram-negati bacillus which can be cultured on yeast charcoal ag *Legionella pneumophila* is now recognized to have least 12 serotypes and the genus has several addition species also producing pneumonia. The diagnosis b fluorescent antibody examination of respirato secretions can be accomplished in just a few hours ar retrospective diagnosis can be made by indire fluorescent antibody titer rises in convalescent serur Legionella resides within macrophages; the ho defense is cell-mediated immunity and thus th organism is seen with increased frequency in patien receiving immunosuppressive drug therapy. Th organism appears to be indigenous in water supplie sinks, showers, etc., including such sites within hospital It is now recognized that the pneumonia can b complicated by lung abscess, empyema, an dissemination to extra pulmonary sites including th central nervous system. Therapy is high dos erythromycin, 4 g/day, although this treatment can b complicated by transient but reversible eighth nerv deafness. A remaining problem is the choice c antibiotics when erythromycin cannot be used. There not yet enough experience to translate *in vitro* sensitivit to trimethoprim-sulfamethoxazole and rifampin t clinical utilization.

2. Cat Scratch Fever

Wear, et al., 1983 examined lymph node biopsies fror 39 patients clinically diagnosed as having cat scratc disease.[4] The nodes were histologically compatible wit the clinical diagnosis and all failed to yield growth on variety of bacteriologic culture media. The nodes fror 34 of the patients were stained by a silver impregnatio method and 29 showed pleomorphic, rod-shaped bacil from 0.6-3.0 um in length. They were gram-negative i tissue and were not acid-fast. The bacilli were foun singly, in short chains or in clumps in the walls c capillaries and histocytes and appeared to be replicatin intracellularly. The organisms react by immuno peroxidase staining using convalescent sera from ca scratch disease patients and there is no cross reactio with rickettsia or legionella antiserum. Culture i artificial media has not been reported. The nature of thi bacterium and its growth requirements remain to b defined.

3. Corynebacterium JK

A unique Corynebacterium species termed "JK" wa orginally found in association with bacteremia in bon marrow transplant recipients and has occurred in othe immunosuppressed and neutropenic patients.[5] Th infection has been noted predominantly in men. Th sources of bacteremia have been contaminate

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travascular lines and pulmonary infections. Three-uarters of the patients have died during their ospitalization, but not necessarily of the infection. orynebacterium JK is exceptionally resistant to antiotics, possibly because of selective antibiotic pressure these patients and their hospital environment. ancomycin is the primary agent for treatment of this fection.[6]

Just as the isolation of a "diphtheroid" from the spinal uid of the immunosuppressed suggests the possibility listeria, the isolation of a "diphtheroid" from the ood in the immunocompromised should prompt the onsideration of the highly antibiotic-resistant orynebacterium JK.

Delta Agent

In 1977 Rizzetta (Milan, Italy) identified, by nmunofluorescence, a new antigen system in the epatocyte nuclei of a patient with chronic hepatitis B fection.[7] This antigen termed "Delta agent" is a new rus that replicates only in persons (or chimpanzees) at have chronic hepatitis B surface antigenemia and articularly in those HB_sAg positive persons who eceive multiple parenteral injections of blood or blood roducts. In such patients the infection is almost always mptomatic and is accompanied by progressive liver amage.[8] The infection is associated with the presence Delta antibody in the serum and a decrease in the epatitis B markers. The prevalence of Delta agent in aly in those with HB_sAg is from 2% to 39%. Delta ntigen appears to be worldwide in distribution.[9]

The Delta antigen is a protein with a molecular weight about 70,000 d. The antigen is associated with an RNA ore of mw 5.5×10^5 d and occurs in the serum in a 35 to nm subpopulation of HB_sAg particles, as contrasted ith the usual 22 nm HB_sAg particle. Apparently Delta gent is a defective RNA virus which requires hepatitis B rus as a helper for replication and uses HB_sAg as its apsid or surface coat.[10]

The natural history and epidemiology of this new virus ould prove to be an interesting story.

. *Lyme Arthritis*

In 1977 patients in Old Lyme, Connecticut were escribed in whom the bite of an Ixodes tick resulted in a ustular lesion with an expanding indurated rythematous base appearing identical to erythema hronicum migrans (ECM), a cutaneous lesion known in urope to follow tick bites and to have CNS anifestations.[11] In these patients, fever occurred itially and subsided within a few days as the skin lesion esolved only to be followed in weeks to months by ecrudesence of fever associated with joint, cardiac or entral nervous system involvement. Lymphadenopathy as common. The arthritis is probably on an immune omplex basis, occurs in half the patients, most ommonly affects the knee, and recurrences are equent. Cardiac involvement in the form of onduction blocks occurs in 10% to 20% of patients. Meningitis, encephalitis and radiculitis also occur in 15% o 20% of patients. The course of the infection is favorably influenced by pencillin G, 250,000 units q.i.d. or tetracycline, 250 mgm q.i.d. but not by erythromycin. Penicillin and tetrocycline shorten the course of the ECM and prevent arthritis but do not influence cardiac or neurologic manifestations.

Recently, a new spirochete has been isolated from Ixodes ticks and from blood, skin and cerebrospinal fluid of a few patients with Lyme disease. Antibody titer rises to this spirochete can be shown in convalescent Lyme disease patients using an immunofluorescent method.[12] This spirochete is believed to be the etiology of Lyme disease.

New Syndromes From Recognized Agents

1. *Antibiotic-Associated Enterocolitis*

Pseudomembranous enterocolitis, the most severe manifestation of the clinical spectrum of antibiotic-associated enteritis, was formerly associated with the overgrowth of *Staphylococcus aureus* in the stool, particularly the enterotoxin food poisoning producing strains. The prevalence of staphylococci in this syndrome has diminished, however, possibly because of the general use of more effective anti-staphylococcal antibiotics. Attention has now been focused on *Clostridium difficile*, a gram-positive spore-forming anaerobic bacterium found in the gastrointestinal tract of man.[13] In *C. difficile* associated enterocolitis exotoxin can be demonstrated in filtrates of fresh stool by cytotoxic destruction of primary human adrenal tissue culture and neutralization by appropriate antitoxin. *C. difficile* produces two exotoxins — toxin A, which produces enteritis in animals, and toxin B, which is detected in the laboratory tissue culture cytotoxin assay.[14] The *C. difficile* exotoxin assay is positive in 96% of cases of antibiotic-associated colitis with pseudomembrane formation but in only 27% of cases without pseudomembrane. The disease was originally thought to be associated uniquely with clindamycin administration but has been shown to be associated with other antibiotics as well. *C. difficile* enterocolitis is treated with oral vancomycin, 250 to 500 mgm per day for five to ten days and additionally recent studies have suggested that oral metronidazole, 250 mgm q.i.d. for ten days may be equally effective and significantly less expensive.

Not all antibiotic-associated enterocolitis is pseudomembranous and it seems likely that there is more to be learned about the broad clinical problem of diarrheas that complicate antibiotic administration.

2. *Cryptosporidium*

Cryptosporidium is a protozoan that parasitizes the epithelial cells in the gastrointestinal tract of animals and birds.[15] This organism has a complex life cycle similar to that of malaria; however, the involvement is in the gastrointestinal tract lining cells where both the sexual and asexual stages occur. There is no insect vector. The initial description of human infection, by Nime in 1977, was followed by only a few additional reported cases. These patients were immunologically normal, had contact with infected animals, and experienced a benign self-limiting febrile gastroenteritis of five to ten days duration.[16]

Recently, cases of cryptosporidiosis have appeared in AIDS patients in whom the disease is uniformly severe, lasts for weeks to months and is usually fatal. The AIDS-cryptosporidia patients have usually not had obvious animal contact and thus the epidemiology in this group is uncertain. The disease is characterized by fever, weight loss, nausea, vomiting, watery diarrhea and malabsorption. Endoscopic and contrast studies of the gastrointestinal tract show nonspecific inflammatory changes. Biliary tree involvement occurs in some. Biopsy shows the oocysts attached to the free epithelial cell border along the gastrointestinal tract from stomach to rectum. Diagnosis can be made by demonstration of 2 to 4 micron diameter round, partially acid-fast oocysts in stool specimens. No therapy has yet been found to be effective; however, additional agents such as spiramycin are currently under investigation.

3. Chlamydia

The chlamydia, while long recognized as the cause of psittacosis, trachoma and lymphogranuloma venereum, are now being associated with a progressively broadening spectrum of respiratory and genital tract infections.[17] The organisms, formerly termed "large viruses," are actually tiny obligately intracellular bacteria that produce basophilic intracytoplasmic inclusion bodies in infected cells and are inhibited by antibacterial antibiotics. Because the organism is intracellular, the host defense is probably cell-mediated immunity.

Tissue culture techniques and immunofluorescent serologic procedures have now shown that there are two species of chlamydia. C. *psittaci* is the cause of psittacosis. C. *trachomatis* includes four serotypes (A, B, Ba and C) that cause trachoma, eight serotypes (D-K) that cause inclusion conjunctivitis, cervicitis, salpingo-oophoritis and up to 40% of cases of nongonococcal urethritis and three serotypes (L_1, L_2, L_3) that cause lymphogranuloma venereum.

Recentiy, C. *Trachomatis* has been associated with lower respiratory tract disease in infants and in both normal and immunosuppressed adults.[18,19] This association was first made in the case of infants who demonstrated a nonfebrile, subacute pneumonia with severe cough. Chest x-rays showed hyperinflation, diffuse interstitial and patching alveola infiltrates with an occasional pleural reaction. In one-quarter of the cases, there was an inclusion conjunctivitis suggesting the possibility of infection from maternal cervicitis.

In adults, C. *Trachomatis* causes a bilateral hazy interstitial pneumonia which, in those who are immunosuppressed, is frequently associated with cytomegalovirus.[20] Evidence of preceding or concurrent genital or ocular infection in the immunosuppressed is not usually observed.

Erythromycin is used for therapy in infants while tetracycline is used in adults.

It seems likely that the relatively limited availability of chlamydia laboratory diagnostic facilities and th extensive use of tetracycline and erythromycin i undefined respiratory and genital infections has maske recognition of the true incidence of chlamydi infections. Active clinical and epidemiologic studies ar now underway to further define the spectrum an frequency of infections caused by these organisms.

Acquired Immune Deficiency Syndrome

The occurrence of a variety of opportunist infections, particularly *Pneumocystis carinii* pneumoni and the dermatologic and systemic malignancy, Kaposi sarcoma, first noted in 1979 among homosexual male heralded the appearance of acquired immun deficiency syndrome (AIDS). The disease complex, wit its unique depression in the cell-mediated limb immunity, is now also seen in Haitian immigrant intravenous drug users, hemophiliacs receiving poole factor VIII concentrate, female sex partners of AID patients and in children in high risk AIDS families.[21,2

The cause of the cellular immune system diseas which results in the heightened susceptibility t opportunistic organisms remains a mystery. Som leading theories include a new virus such as the huma T-cell leukemia virus (HTLV), a retrovirus foun originally in humans with leukemia which infects helpe T cells, infections with cytomegalovirus which immunosuppressive in animals, nonspecific immun suppression due to multiple infections and a autoimmune response to extravaginally deposite sperm.

The occurrence of AIDS has brought into focus th critical role of the host in resistance and recovery fro infectious agents and has presented an uniquely sever challenge to infectious disease physicians, immu nologists and epidemiologists. Certainly the resolutio of the AIDS problem will be a landmark in the advanc of medical science. Since preparation of this manuscrip researchers at NIH have presented compelling evidenc for the retrovirus HTLV-II as the etiology of AIDS.

New Immunizing Agents:

1. Hepatitis B Vaccine

The hepatitis B virus is responsible for serious healt problems with 10% of primarily infected patient developing chronic infection. Other complication include fulminant hepatitis, cirrhosis and hepatic ce carcinoma. A vaccine (Heptavax-B) has been develope that consists of hepatitis B surface antigen particles wit no live or whole viral particles. This vaccine differs fro previously produced vaccines by the sole reliance o human plasma for its production. Because the vaccine i produced from plasma of chronic carriers of hepatitis and because this donor group also might includ potential AIDS victims, there has been concern abou the possibility of the vaccine transmitting AID However, the vaccine goes through a three-fold proces of inactivation (8M urea, pepsin at pH 2 and 1:400 Formalin) each of which should inactivate any know virus.[23] In addition the clinical information gathere since release of the vaccine indicates the vaccine to b ry safe and efficacious.[24] Currently vaccination is commended, especially for health care workers, modialysis patients, homosexual males and sexual ntacts of HBV carriers. New hepatitis B vaccines are ing developed utilizing either recombinant DNA chnology or synthetic production of polypeptide. ials with the recombinant DNA vaccine are currently nderway. There is, however, no reason to delay ccination of high-risk persons until the advent of such w vaccines.

Interleukin-2

In the normal immune response a lymphokine, terleukin 2 (IL-2), is needed for both the regulator and e effector cell function lymphocytes to proliferate. hen the production of Interleukin 2 is impaired, then a arked inability of the host to respond with defenses of ther cell-mediated or antibody-dependent reactions curs. The prototype of infectious diseases char- terized by absent IL-2 production is AIDS,[25] but other fectious diseases of a more chronic nature, such as berculosis, leprosy and visceral leishmaniasis occur th similar but less severe defects. When IL-2 is added *vitro* to cell cultures, much of the *in vitro* effector nctions are restored. The clinical use of IL-2 has come an intense area of research. Currently, trials are nderway using IL-2 produced by recombinant DNA chnology in AIDS victims. The biology of IL-2 ministration is being studied and when dose sponses have been established, it is possible that IL-2 ay provide immunological reconstitution in selected ronic infectious disease entities such as disseminated ccidioidomycosis, extrapulmonary tuberculosis and xoplasmosis. Just as interferons did not become the agic antiviral or antitumor agents, it is likely that IL-2 ll have only a limited place in immunological constitution therapy.

ntimicrobials

Development of new antibiotics is in an exponential hase. Some new antibiotics differ in their antibiotic ectrum, others have unique new sites of action. The ace of these agents in our therapeutic armamentarium ll depend to a certain extent on the rapidity with hich microbes develop resistance to the older agents. any of the new antibiotics are, unfortunately, very stly and should be reserved for use in specific disease tities.

Third-Generation Cephalosporins

Currently on the market are four third-generation phalosporins: Cefotaxime, Ceftizoxime, Cefopera- ne and Moxalactam, with Ceftazidime and Ceftri- one soon to be released. The main advantage of the ird-generation cephalosporins compared to the older phalosporins is their expanded spectrum of activity ainst gram-negative bacteria, including *Pseudomonas ruginosa*.[26] Ceftazidime, in particular, will cover more an 90% of pseudomonas. In addition, the gram- gative bacilli tend to be extraordinarily susceptible ith MICs often 2 logs lower to third-generation phalosporins than to the older antibiotics. It is, however, not yet clear how these improved *in vitro* data will translate to the *in vivo* situation. So far, the only place where these agents have been shown to be superior to other antibiotics is in the treatment of gram-negative bacillary meningitis.[27]

2. *Fourth-Generation Penicillins*

The ureido penicillins, azlocillin, mezlocillin and piperacillin became available at approximately the same time as the third-generation cephalosporins.[28] These antibiotics have basically the same antibacterial spectrum as ticarcillin and carbenicillin except for improved activity against *Pseudomonas aeruginosa* and Klebsiella. In addition, they contain less sodium and may have less effect on platelet function.[29] It is too early to say whether these minor advantages justify their higher cost.

3. *Monobactams*

The betalactam antibiotics are among the most clinically utilized. The betalactams currently on the market or being studied include: penicillins, cephalosporins, clavulanic acid, thienamycin and monobactams. The monobactams have a sulfonate group which replaces the second-ring structure. With this structural change, an interesting difference in antibacterial activity is evident. Activity against gram-positive cocci and anaerobes is lost but activity against gram-negative bacilli is increased substantially to a degree compatible with the third-generation cephalosporins.[30] Monobactams thus have a narrow spectrum and their use will necessitate a different selective strategy. How monobactams will compare with the third-generation cephalosporins and the aminoglycosides in clinical usage will be interesting to follow when the first monobactam, Aztreonam, is marketed (summer, 1984).

4. *Quinolones*

In certain gram-negative infections the only available active antibiotics have been the aminoglycosides, all of which must be given parenterally. This situation might change as a new class of antibiotics, the quinolones, is scheduled for study. These drugs are remarkable insofar as they have a spectrum somewhat similar to that of the aminoglycosides with activity against Klebsiella, enterobacter, E. coli and pseudomonas as well as against Staphylococcus aureus but are active when given orally.[31,32] The quinolones inhibit bacterial DNA gyrases and thus act at a very different site than do all the commonly used antibiotics. This different and novel site of action might account for the infrequent finding of resistant aerobic strains "bacteria in the noses and guts of our ancestors have not been continuously exposed to them the way they have to mouldy marmalade".[31] Quinolones might very well change the way we treat patients infected with pseudomonas and other troublesome organisms and are potentially the most interesting of the new antimicrobial drugs.

5. *Praziquantel*

Outside the developed nations, parasites account for most infections. Many parasitic diseases carry high morbidity and their treatment has been difficult. Recently one compound, Praziquantel (Biltricide), has been licensed in the United States and has greatly improved the ease and safety of treatment of several classes of parasites.[33] Praziquantel is now the treatment of choice for schistosomiasis, the liver flukes (which hitherto could not be treated) and tapeworms. In addition, clinical evidence suggests that Praziquantel is the first drug active in Cysticercosis, the bladder tapeworm, a disease important to the Arizonan physician treating Mexican patients.

6. *Antivirals*

The most active antiviral agent currently on the market is Acyclovir. Acyclovir has activity against the herpes-type viruses, including Herpes simplex, Type 1 and Type 2. It does not, however, act on the latent form of the virus, so when the drug is discontinued relapses often occur. Also, it is inactive against cytomegalovirus and Epstein-Barr virus. Antiviral agents with activity against these viruses are currently in developmental status.

We are now a century from the discovery of the germ cause of disease, 75 years from the development of immunization against microbial agents and 50 years from the inauguration of the antimicrobial era and while a number of specific infections have been conquered, infectious diseases have by no means been eliminated. The fundamental reasons for this are two-fold; first, we do not live in a germ-free environment and second, clinical infectious diseases are the resultant of the virulence of the microorganisms and the defense mechanisms of the host. Environmental manipulation, such as sanitation and sewage disposal, can serve to prevent contact of the infectious agents with the host. Immunization procedures can be used to premobilize the host defenses before the infectious agent is encountered. However, disease such as lymphoreticular neoplasias and therapeutic modalities such as cytotoxic and immunosuppressive drugs impair the host's defenses so that usually innocuous organisms can and do invade. The elimination of all microorganisms does not seem to be an achievable or even desirable goal; thus increased attention in the future must be directed towards the management of perturbed host defense mechanisms along with the ongoing search for better antimicrobics and international efforts to apply existing medical and public health knowledge in developing nations.

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Neurology

edical Therapy of Stroke

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Medical therapy for stroke remains a controversial bject. Although there have been a number of recent dvances in our knowledge of stroke, optimal therapy ill is not readily defined. While this discussion focuses n the stroke which has occurred, the ideal therapy is at which prevents the stroke. Identification and eatment of risk factors and transient ischemic attacks e beyond the scope of this paper. However, many of e therapeutic considerations mentioned below can be pplied to prophylactic situations.

The therapy of acute stroke can be divided into two tegories: 1) treatment to decrease the extent of or nprove recovery from the stroke, and 2) therapy tempting to prevent further strokes. Therapy depends n the etiology and pathogenesis of the stroke. The first ep in diagnosis is to determine if the stroke is an farction due to local thrombosis, the result of an nbolus of carotid or cardiac origin, or a parenchymal emorrhage.

Thrombotic stroke has classically been divided into completed stroke and stroke-in-evolution. Unfortunately, the latter often can only be documented after progression has occurred. A more pragmatic distinction is between small strokes and big strokes, emphasizing that a patient with a small stroke has more to salvage, often justifying more aggressive treatment.

Embolic strokes typically present with an abrupt onset of a deficit which often then diminishes during the initial twenty-four hours. A diagnosis of embolic stroke always indicates a need to search for a medically or surgically treatable source of emboli.

Cerebral hemorrhage is an indication for neurological or neurosurgical consultation to determine the cause and appropriate therapy. Medical treatment is primarily directed towards control of increased intracranial pressure.

The underlying pathogenesis must also be defined. While most strokes are due to atherosclerotic vascular disease, other mechanisms such as vasculitis, vasculopathy (e.g. fibromuscular dysplasia), and migraine may justify alternative therapy.

Table 1
Therapy for Cerebral Infarction

1. Improve cerebral blood flow and metabolism
2. General therapy for comatose and debilitated patients
3. Rehabilitation
4. Prevention of further strokes

Therapy to improve recovery from stroke falls into four categories: 1) means to improve cerebral blood flow or metabolism, 2) supportive measures for the comatose or neurologically debilitated patient, 3) rehabilitation, and 4) prevention of further strokes.

The ideal treatment would prevent or minimize cellular damage. Historically, anticoagulation has been suggested as a means of dissolving the clot and restoring cerebral blood flow. Unfortunately, heparinization is of no help in the established stroke and only exposes the patient to the hemorrhagic complications of anticoagulation.[1] Anticoagulation may be of benefit in strokes in evolution. Heparinization is justified when a neurologic deficit is evolving, and in some settings of basilar artery and internal carotid occlusion in which propagation of the thrombus may cause delayed extension of the stroke. Lacunar stroke syndromes must be identified as they may evolve over one or two days and should not be anticoagulated.

Adequate blood pressure must be maintained, ensuring perfusion of the ischemic brain. While many stroke patients have hypertension, the acute stroke is not the setting for aggressive anti-hypertensive therapy. More damage is done by dropping the blood pressure acutely than by deferring treatment until the acute phase of the stroke has passed. In general, blood pressures under 180-200/110-120 do not require acute

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therapy. Hypotensive patients should receive vasopressors to maintain adequate cerebral blood flow. Keeping a patient at bed rest, with head down for the first two or three days is advised to maintain adequate cerebral perfusion.

Cerebral metabolism is further impaired in the presence of anemia and hyperviscosity syndromes, such as polycythemia. If present, these conditions should be corrected.

The concept of an ischemic cascade has recently been offered as a mechanism for cerebral infarction.[2] Interruption of cerebral blood flow sets in motion a sequence of events culminating in neuronal death. Thus, the presence of decreased cerebral blood flow and the associated reduction in oxygen saturation result in intra- and extracellular accumulation of lactic acid. The lactate in turn causes increased calcium entry into cells with resultant breakdown of membrane phospholipids and, finally, cell death. Increased blood glucose enhances formation of lactate such that hyperglycemia worsens the outcome in stroke. This concept refutes the therapeutic nihilists, emphasizing that a stroke is not an all or none process. A potentially viable zone of brain exists around the area of infarction and a variety of therapeutic interventions may reduce the volume of damage. One currently available therapeutic application is the avoidance of hyperglycemia.[3]

A number of therapies remain unproven. Intravenous low molecular weight dextran and glycerol have been used by some without convincing benefit. Calcium channel blocking agents might theoretically interfere with the entry of calcium into cells and minimize the resultant cell damage. Recent clinical trials have yielded equivocal results, perhaps due to the adverse effect of hypotension associated with treatment. Prostacyclin and its potential derivatives hold promise for stroke therapy. Prostacyclin will be discussed below regarding its role in preventing platelet aggregation.

A number of therapies should be avoided at this time. These include streptokinase (associated with increased risk of hemorrhagic infarction), barbiturate coma (helpful only when given before infarction occurs) and vasodilator therapy (diverts blood from ischemic vessels which are already maximally dilated).

A second group of therapies are those directed towards general support of the comatose and neurologically debilitated patients. These include treatment of increased intracranial pressure, seizure control, prevention of phlebitis and pulmonary embolism, bowel and bladder care and detection and treatment of hypoxia, hyperglycemia, and hyper- or hyponatremia.

Increased intracranial pressure occurs commonly in large strokes. Unfortunately, the edema of cerebral infarction is predominantly cellular swelling and does not respond to dexamethasone (Decadron). Because of adverse side effects, steroid therapy should not be routinely employed in ischemic stroke.[4]

Table 2
Means of Improving Cerebral Blood Flow and Metabolism

1. Anticoagulation — selected cases
2. Maintain adequate blood pressure
3. Correct polycythemia or anemia
4. Avoid hyperglycemia

Persistent focal seizures are common in emboli strokes. Intravenous Dilantin is the drug of choice sinc it avoids sedation. Continuous focal seizure activit such as facial or arm/hand twitching or jerking, may b very resistant to treatment. It often is wiser to perm ongoing seizure activity that is not life threatening tha risk overmedication and sedation.

The final area of therapeutic intervention is that whic attempts to prevent further strokes. In some emboli strokes the risk of further emboli can be precisel defined. Patients with atrial fibrillation associated wit rheumatic heart disease have a 30% to 35% risk c developing a stroke.[5] When a stroke occurs in thi setting there is a 40% to 50% risk of recurrent stroke, wit one half occurring within two weeks of the first stroke Patients with atrial fibrillation who do not hav rheumatic heart disease have a 10% to 25% incidence c stroke. Following such a stroke there is a 30% to 40% ris of recurrence, again with one half developing in the firs two weeks. In these settings of high risk for recurren stroke, anticoagulation is advised unless contraindicated.[1,6] The contraindications consist of 1) hemorrhag seen on the computerized tomographic head scan, 2) septic embolus, 3) severe hypertension. Patient receiving heparin anticoagulation for seven to ten day have a 5% incidence of hemorrhage developing in th infarction.[7] This contrasts favorably with a 20% to 25 risk of rapid stroke recurrence in untreated patients wit atrial fibrillation. Long term anticoagulation wit Coumadin should be considered in such patients. Thi carries about a 5% cumulative yearly risk of hemorrhagi complications.[1] These risks may be justified whe supraventricular arrhythmia is intermittent an recurrent, especially when the patient is intelligent an cooperative. Indeed, some authorities now recommen chronic Coumadin anticoagulation for patients wit chronic or recurrent atrial fibrillation, initiating therap prior to a TIA or stroke.

To summarize, anticoagulation with heparin o Coumadin should be considered in 1) embolic strok where a risk of reembolization is considered to be great 2) stroke in evolution, and 3) some symptomatic basila artery and middle cerebral artery stenoses. Heparin ca also be used in high grade carotid bifurcation stenosi until surgical correction can be arranged. Anticoagulation is not justified in completed thromboti stroke. Following these guidelines, the majority o stroke patients will not require formal anticoagulation

Most thrombotic and many embolic strokes resul from fibrin-platelet aggregation and are best prevente

agents which decrease platelet aggregation.[8] The
ree available medications demonstrated to prevent
atelet aggregation in the laboratory are aspirin,
rsantine (dipyridamole), and Anturane (sulfin-
razone). Only aspirin has been demonstrated
fective in clinical trials. While some trials show the
fectiveness to be limited to men, others find no such
x differential.

When platelets come in contact with a nonendothelial
rface (e.g. the exposed collagen of ulcerated plaques
d cardiac valves) the platelet release reaction is
ggered. A number of substances are released from the
atelets resulting in platelet aggregation. Aspirin blocks
e platelet release reaction, and thus decreases
rmation of fibrin-platelet emboli. Aspirin also blocks
rmation of prostacyclin, a prostaglandin which
ormally is present in blood vessel walls and which has
tural antithrombotic and vasodilating activity. It is
ared that higher doses of aspirin could interfere with
ese beneficial effects. Since as little as 125 mg of aspirin
day will block platelet aggregation in the laboratory,
ere is a recent trend toward lower aspirin dosages. It is
oped that clinical trials in progress will resolve the
lemma of the ideal dose of aspirin. One now finds
tients taking between one and four aspirin a day, with
e larger dose having been demonstrated effective in
inical trials.

Table 3
Therapy for Comatose and Debilitated Patients

1. Treat increased intracranial pressure, if possible
2. Treat seizures; Dilantin avoids sedation
3. Monitor glucose for hyper- or hypoglycemia
4. Monitor sodium for hyper- or hyponatremia
5. Oxygen therapy, only when hypoxia is present
6. Monitor for cardiac arrhythmia
7. Prevent phlebitis/pulmonary embolism
8. Provide bowel and bladder care

I recommend early therapy with aspirin following TIA
r stroke in patients who are not candidates for
nticoagulation. If a patient is at particularly high risk, I
ill simultaneously start therapy with Persantine, 75 to
00 mg three or four times daily. Otherwise, Persantine
ill be withheld until additional ischemic events occur.
ince Persantine is expensive and may cause symp-
omatic orthostatic hypotension due to vasodilatation,
outine therapy with the combination of aspirin and
ersantine is not recommended.

The future holds great promise for improved medical
herapy for stroke. For the present, the treating
hysician is advised to restrict use of heparin and
Decadron to those few indications reviewed above.
voidance of hyperglycemia and maintenance of an
dequate blood pressure will help obtain optimum
outcome in stroke patients.

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Obstetrics & Gynecology

Blood Pressure Cuffs: How Big is Big Enough?

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We all face daily the task of taking blood pressures on obese, pregnant women. The question of which cuff to use is raised frequently. Some people fear over-diagnosis of hypertension if a small cuff is used, others fear under-estimating very real hypertension if too large a cuff is used. A lot of research on blood pressure measurement has been done, some of it on obese subjects. In the last two years, some good research on the effect of cuff size and obesity on blood pressure measurements has been done. This paper summarizes the new data and proposes a technique to apply it.

In brief, a blood pressure cuff consists of a strip of cloth containing an inflatable bladder. Two tubes extend from the bladder, one connected to a bulb that inflates the cuff, the other, to a manometer that measures the air pressure within the cuff. The cuff is wrapped around the patient's upper arm and inflated, thereby occluding the brachial artery. The cuff is then deflated while arterial sounds (Korotkoff sounds) are listened for. The first sound to appear corresponds approximately to the true systolic blood pressure. The final disappearance of sound corresponds again approximately to the true diastolic blood pressure. Cuff blood pressure is not a true blood pressure, only an indirect measure.

Research is being done to find out how accurate the cuff blood pressures are. Current research suggests that blood pressure measurements depend on several factors; among them are:

1. Cuff size
2. Patient's arm size
3. Technique

Assuming that you already know how to use a cuff, this paper will talk only about cuff size and patient size. An outline of important steps in blood pressure taking is then included.

Cuff Size Versus Patient Size

Early work on hypertension assumed that the standar adult blood pressure cuff (with its 13 x 23 cm. bladde was the best size for everyone. A second assumption w that other sizes of cuff gave inaccurate results.[1] Sinc then several researchers have shown that cuff bladd sizes are crucial to accurate measurement. Th American Heart Association now has guidelines for th ideal blood pressure cuff. The cuff has a bladder that long enough to encircle at least 80% of the arm with th bladder centered over the artery.[2]

The American Heart Association also has an elaborat formula that tells which cuff width to use depending o how long the cuff bladder is and on how large th patient's arm is. However, if you use a long enough cuf one with a bladder that completely (100%) or near completely (80%) encircles the arm, cuff width is n important.[3] So we can skip the American Hea Association formula for cuff width.

Now that we have a long enough cuff (80% to 100 encirclement with the cuff bladder), how big is too big And what happens if the cuff is too short? An excellen and exhaustive study (84,000 blood pressur measurements) has shown that:

- the standard adult cuff (13 x 23 cm bladder)
- the large adult cuff (15 x 33 cm bladder)
- and the thigh cuff (18 x 36 cm bladder) differ least i

small patients (arm circumference 24 cm), and that th differences increase dramatically as the patient's ar becomes too large for the cuff being used.[4] For example in moderately obese patients, the standard bloo pressure cuff overestimated the diastolic by 5 to 10 m Hg and the systolic blood pressure by 7 to 13 mm Hg. Th thigh cuff, though, underestimated the diastolic bloo pressure in very thin patients by only 3 to 5 mm Hg. Thu too small a cuff gives a worse error than too large.

How do we turn this data into practical usage? Usin American Heart Association guidelines and this data, simple rule of thumb follows:

The American Heart Association suggests 80% as ide arm encirclement, but they allow 75% to 100% as th optimal range. This range translates into Table 1, below

Table 1

Cuff	Bladder Size	Maximum* Arm Size
BAUM adult	13x23 cm.	31 cm.
BAUM large adult	15x33 cm.	45 cm.
BAUM thigh	18x36 cm.	48 cm.
PyMaH adult (brown #1)	13x30 cm.	37 cm.
PyMaH adult (brown #2)	13x30 cm.	37 cm.
PyMaH adult (black)	13x23 cm.	31 cm.

*Where arm size is circumference measured at the middle o the upper arm.

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This table presents a problem because it conflicts with e manufacturer's labels printed on the cuff. The aximum arm sizes allowed by the manufacturers are o generous to be accurate. We therefore need to elabel all blood pressure cuffs to conform to the aximum arm sizes listed above. Such a relabelling cheme is already in use and in print.[5]

The relabelling works like this:

Lay out the cuff as in the drawing with the cuff bladder n your left, and with the manufacturer's "range" howing. Measure the length of the bladder from the eft end of the cuff. Look up the bladder length in Table 2 elow. Look up the new "range" distance that goes with he bladder length.

Using the "new range" from above, measure this istance from the left end of the cuff and mark the cuff ith an indelible line. This is the new maximum range of he cuff; it will be much shorter than the manufacturer's abelled range. Put an "X" on the manufacturer's range o alert future users of the cuff.

With your new cuff in hand, let's review in quick outline form the pitfalls of routine blood pressure taking on obstetric patients.

1. Place pregnant patients in left or right lateral decubitus position to avoid both supine hypotension and reflex hypotension.
2. Apply the cuff to the nondependent arm (the arm on top), even if the IV is in that arm.
3. Apply the cuff tightly over its entire width. It is only too tight when its uninflated pressure is greater than the diastolic. A loose cuff is the same as one that is not wide enough (neither you nor I want to get involved in cuff width formulas).
4. Be sure that the artery label is over the brachial artery.
5. Check the *new* range mark to see if the patient's arm is too big. Ignore the manufacturer's range marklines. Get a bigger cuff if you need one.
6. Take the pressure as you have always done, rapidly inflating and slowly deflating the cuff as you listen for the Korotkoff sounds. Record both muffling and loss of sound as diastolic pressures.

Table 2

Cuff	Bladder Length	Manufacturer's Labelled Range	New Range
BAUM adult	23	24-34	24-31
BAUM large adult	32	32-45	no change
BAUM thigh	36	45-65	45-48
PyMaH adult (brown #1)	30	30-35	no change
PyMaH adult (brown #2)	30	30-47	30-37
PyMaH adult (black)	23	23-46 (or 52)	23-31

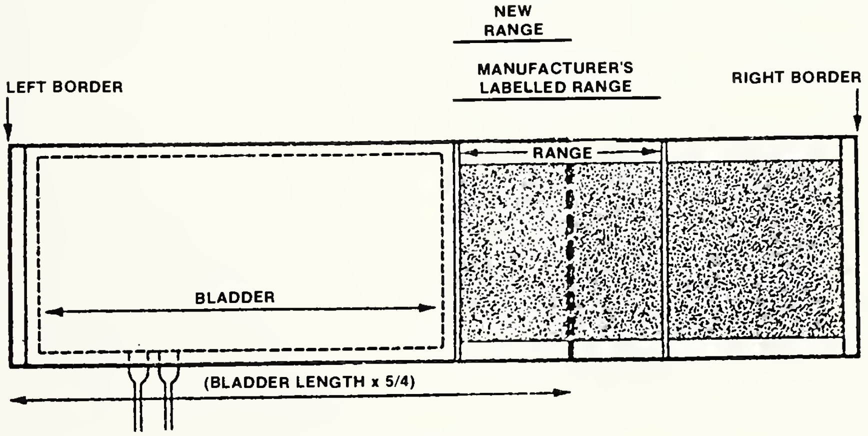

Figure 1
Re-marking of the inner surface of sphygmomanometer cuff for proper fit.

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Psychiatric
Disorders

Autism: The Case for Left Hemispheric Damage

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Abstract

The etiology of autism is poorly understood. This paper reviews certain recent neuroanatomical findings and relates these to the clinical symptomatology of autism. This data suggests that the theory of hemispheric specialization at least partially can explain the intricacies of this disease process and can suggest an efficacious method to facilitate the acquisition of language in previously mute or echolalic autistic children.

Key Words: autism; brain disease; neuroanatomy.

Autism is a syndrome of remarkably consistent perceptual and behavioral abnormalities secondary to early, profound central nervous system damage, yet to be clearly defined. Symptoms indicative of brain damage include major seizures and retardation, as well as electroencephalographic and pneumoencephalographic abnormalities.[1] Many of the functional impairments which are consistently noted in autistic children suggest selective damage to the left hemisphere of the brain. Autistic children who are neurologically impaired are the ones most likely to demonstrate signs of left brain deficit such as delayed or absent speech. On intelligence testing these youngsters' verbal scores are almost always below the performance scores and they score the best on right hemisphere dependent subtests: form boards, block design, and object assembly. Autistic children who are more intelligent and who have developed speech demonstrate a left ear advantage and seem to develop language functions in the right, rather than the left hemisphere.[2] Although some studies have shown that autistic childr are likely to be left handed[3,4] others have not[2,5,6] and reasonable conclusion seems to be that there is not close relationship between handedness and langua lateralization.[7]

Neuroanatomic Research

Neuroanatomic findings are suggestive but as y inconclusive. The brains of some autistic childr demonstrate atrophy of left medial temporal lo structures.[8-10] An impaired ability to assimilate words characteristic of lesions in the left temporal lobe[11] ar this is also a prominent symptom in autism.[12] Hier, al.[13,14] employ computerized tomography to demo strate reversed morphologic asymmetry in the brains autistic patients, with the right temporal plane found be larger than the left. This suggests that the sympto of autism stem from a significant lesion of the le temporal lobe with a resultant deficit in left hemispher function, while right hemispheric function remai relatively intact. However, Hier's work is not support by more recent research[15] and further study has shown variety of abnormalities, as well as no discernib abnormality in the brains of autistic children indicati that the pathogenesis of autism depends on a variety mechanisms which act upon the neural system to rend it dysfunctional. Some mechanisms would operate at cytological or neurochemical level and thus would n be evident on computerized tomography.[16]

This paper will first present some aspects hemispheric specialization theory which are relative new and somewhat speculative and then will describe clinical application of this schema to autism which h yielded an innovative and apparently effecti therapeutic modality.

Hemispheric Specialization Theory

Research on hemispheric specialization began in th 1960's, when it was restricted to a handful of epilept adults with intractable seizures who had had a surgic procedure which severed the corpus callosum an thereby the connections between the hemisphere These "split brain" patients revealed subtle but consistent changes: they seemed to possess two separat conscious minds with differing functions.

Each hemisphere seems to have its own area o expertise: in the typical right handed person, the le brain handles language processes, verbal images, an mathematical calculations while the right side i specialized for music and spatial relations such a geometrical shapes and patterns on which mechanica skills depend. There is some overlap: the right brain ca perform simple addition up to ten and it has the use of few words with syntax at about the level of a two yea old.[17-20] The most fundamental difference between th hemispheres is not that each is specialized to work wit different materials such as words or patterns but tha each has a separate cognitive style or system fo processing information.[21] The left is analytic, logical an deductive: it appreciates each tree but may miss th forest. The right adopts a holistic, synthetic or inductiv

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pproach which immediately perceives the "gestalt" of e forest but misses the trees. Clearly, both modes must ot only be present but integrated for optimal nctioning. When one hemisphere's contribution eatly exceeds the other, the result is a cognitive style hich is limited, idiosyncratic, or confused.

The left and right brain differ in yet another respect hich is especially important in considering autism: the ft brain is involved in intended, conscious activity; the ght contains programmed, automatic functions. This ecessarily involves an internal transposition: a child ruggles to learn how to tie his shoelace. Later he does it ithout thinking. A beginner typist hunts for the correct ey while the expert floats through eighty words a inute. Most daily activities have become automatic for e average person.

rain Development

Hemispheric dominance continues to develop until fter puberty. Newborn infants already demonstrate left erebral specialization for speech sounds[22] and ninety ercent of infants in the first week of life will turn their eads preferentially to the right.[23] During childhood, ere is progressive myelinization of the corpus allosum; commissural transmission increases in onjunction with the myelinization process. There is no emonstrable evidence of transmission across the ommissure until after age three and a half.[24] Before age ve, all language processing takes place in the left emisphere, including the acquisition of a second anguage. The right brain is involved when language is cquired later, near age eleven.[25] There is an internal equential development and stabilization of function which matches the child's physical and behavioral gains. This process continues up to or beyond age thirteen.

The neurological development of many infants and hildren is remarkably plastic. Removal of one emisphere in a normal youngster can alter the developmental sequence so that both verbal and spatial unctions are acquired by the remaining hemisphere; no permanent dysphasia will develop.[26] However, when cognitive abilities are squashed into a single hemisphere, the verbal functions tend to develop at the expense of spacial abilities: the result is a child of somewhat lower intelligence with limited nonverbal skills.[9] However, the child will definitely not appear autistic: autistic children are far more severely impaired, with pronounced uncompensated deficits in social and language skills. Here, Milner's[27] findings are relevant. She indicates that temporal lobe lesions outside of the specific speech area result in deficits of function which are not transferable to the opposite hemisphere. Therefore, the primary impairment in autism could involve skills such as verbal memory, and this would secondarily impede the acquisition of language. Thus damage to the left temporal lobe which spares Broca's area, would obviate the transfer of function to the right hemisphere and thereby would yield the clinical picture of a child with substantial deficiencies in language but intact visuo-spatial skills.[9].

Relationship to Autism

Autism is a severely debilitating condition. Although approximately ten percent of autistic individuals do build skills sufficient to allow an independent existence, 62% to 74% have a poor or very poor outcome, remaining in an institution or some form of custodial care. The I. Q. score and the child's acquisition of useful speech are the best predictors of outcome.[28] Moderately and severely retarded children who have not acquired communicative speech by the age of five have the worst possible prognosis. These youngsters commonly demonstrate bilateral hemispheric deficits.

Four major criteria which define autism are: onset before age thirty months, severe impairment of social development, delayed and deviant language acquisition, and an insistence on sameness as shown by stereotyped play and resistance to change.[29] Other cognitive deficits suggestive of left hemispheric damage are impairments in abstract reasoning, sequencing, and in understanding written or spoken language. An autistic child may read accurately at a college level but comprehend nothing. Autistic children usually are unable to use symbolic play. Play, like speech, is a particular vehicle by which symbolic function is expressed.[9,30] The autistic child drops or picks at dolls but will not attempt to cuddle or feed them.

Impairment of left cerebral function in autistic children is most cogently demonstrated by the profound disturbance in language and symbol processing skills.[9] Deficits range from no recognizable speech or muteness through echolalia or parrot speech to defects in high levels of language functioning. When speech is developed, it is most often characterized by concreteness, repetitiveness, and recognition without analysis—all considered to be right hemisphere characteristics.[29] Other signs which suggest left brain interruption include an incapacity for adaptive social behavior, lack of recognition of the emotional significance of persons or events, lack of concern for others, and an absence of sustained, purposeful activity.[9] The profound deficit in logical connectedness is well demonstrated by the fact that autistic children can memorize nonsense syllables just as well as material which "makes sense."[31] In contrast to these major limitations are the autistic child's impressive mechanical interests and excellent memory for places and melodies. The ability to recall faces is preserved although the child is unable to distinguish between the familiar and the unfamiliar face.

Some autistic youngsters are "idiot savants" or retarded children with an isolated area of genius. One such child can take apart and reassemble clocks without instructions; another can reproduce exactly a complicated piece on a piano, without being able to read music; a third can do calendar calculations by instantly supplying the correct day of the week for a given date, be it thirty years ago.[32,33] These children are never observed learning these remarkable skills; they simply possess them. With calendar calculations, the answers are so swift that no formula could have been employed; the child cannot explain why the answers are correct. Whatever the method, it is clearly a right brain automatic function, perhaps compensatory in nature.

If a left hemisphere function such as language processing is impaired in autistic children, how can the reasonably competent right brain be helped to overcome the deficit? Here, the theory of hemispheric specialization has suggested a solution: now even low functioning, mute or echolalic, autistic children are being taught to sign, thereby utilizing the right brain's ability to appreciate shapes and patterns. Once sign language is understood, the children continue to remember and use it. Most learn to combine receptive and expressive signs; many who can sign begin to speak, often dropping the sign once the spoken word is mastered. At the same time, the children manifest marked improvement in adaptive behaviors[34,35] although they remain markedly impaired in many areas. Standard behavioral modification techniques, parental involvement, and simultaneous signing and speaking after signing is understood, all facilitate the learning process.[36] Similar methods include the pairing of words with pictures, and the teaching of Chinese logographs which can then be associated with English words. However, in order to take advantage of any of these visuo-spatial approaches, the child must be able to observe and recall sign patterns; he or she also must possess the initiative to reproduce them as needed.[37]

Autistic youngsters can accurately distinguish one facial configuration from another but they have difficulty in determining subjective feeling states such as fear, sadness, and joy. They may be taught to recognize various emotional states by associating certain internal sensations with the appropriate facial configuration. Eventually this may lead to the identification of internal feeling states, a highly impossible task for most autistic children.

Conclusion

Although research on hemispheric specialization is in its infancy, it has already yielded a theoretical frame on which to appreciate the brain's orchestration of mood, cognition, and behavior. This is especially relevant to autism, with its manifest congruence of symptoms and neuroanatomical findings.

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Radiology

Spect: A New Direction for Nuclear Medicine

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bstract

Single photon emission computed tomography SPECT) obtained with a rotating gamma camera is ecoming available in many centers. The cost is 30% bove the cost of camera and computer which can also e used for planar imaging. Patient participation time is imilar to a planar scan but reconstruction requires onsiderable time by a physician or skilled technologist.

With SPECT, one can see behind overlying structures or background which increases image contrast and lesion detectability. Spatial relationships and measurements are facilitated. Volumetric quantitation of lesion or organ size and tracer uptake are possible.

SPECT T1-201 cardiac imaging for ischemia or M. I. is significantly more sensitive and accurate than planar imaging. SPECT also increases the detection, localization and sizing of M. I. with Tc-99m pyrophosphate. SPECT augments liver/spleen, bone, kidney and other morphologic imaging studies and it offers great promise with newer agents such as iodoamphetamines to measure brain perfusion and monoclonal antibodies for tumor detection and localization.

Key Words: Emission Computed Tomography; Nuclear Medicine; Radionuclide Imaging.

In its short lifetime the field of Nuclear Medicine has experienced several major technologic advances that significantly changed its direction. Initially a specialty that used radioactive tracers to quantitate the function and kinetics of the thyroid and other organs or systems, or to measure blood volume or other body spaces, the introduction of the rectilinear scanner in the early 1960s allowed imaging of morphology and detection of pathology in organs such as the brain, the liver, the thyroid and the lung, that had defied radiographic techniques. Just a few years later the introduction of the gamma camera provided a means to image the dynamics of organ blood flow and function. Quantitation of these processes with minicomputers became possible during the last decade typified by gated cardiac blood pool studies — the "MUGA" test — which allows noninvasive imaging and quantitation of cardiac wall motion and function.

Three-dimensional imaging has become commonplace through x-ray CT and sonography, and magnetic resonance imaging has generated much interest and speculation about its clinical applications although this technology is still limited to relatively few centers. For several years, position emission tomography (PET scanning) was virtually Nuclear Medicine's only means of transaxial imaging. Although it has yielded valuable information about the regional physiology of the brain, PET scanning has been limited to about fifty centers throughout the world because of its expense and particularly the need for close proximity to a medical cyclotron to supply the very short-lived position-emitting radionuclides. Recently, single photon emission computed tomography (SPECT), utilizing modified gamma cameras and conventional radiopharmaceuticals, has provided radioisotope transaxial imaging capability at many university and community hospitals. We have been performing SPECT for the past year and our experience forms the basis of this report.

SPECT Technology

In many respects, SPECT is similar to x-ray CT. In both systems a radiation-sensitive detector circles around the patient who lies in the center of rotation of the device (Figure 1). Instead of shooting x-rays through the patient to the detector as with CT, with SPECT gamma photons

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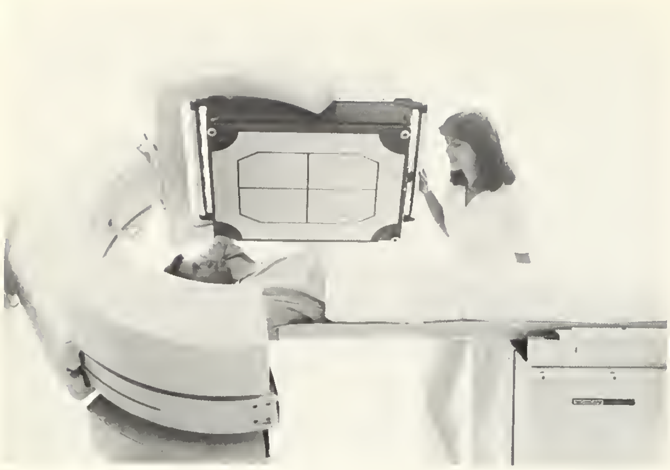

Figure 1
Rotational gamma camera system with SPECT capability. (Photo courtesy of Technicare Corp.).

emitted from a radiopharmaceutical in the patient are detected by the rotating gamma camera head and the image is sent to a minicomputer. Typically, the camera will be programmed to make images at 90 stops at four degree intervals around the patient. As with CT, the image from each angle is "back-projected" through a matrix in computer memory which reconstructs the distribution of the radioactivity in the transaxial plane. Unlike CT, however, a large field of view can be encompassed on one rotation with no skip areas. One brand of camera, for example, can scan twenty inches of body surface length. Since the entire organ or body section is represented in the computer matrix, reconstruction along coronal, sagittal, or oblique planes is easily obtained from the same rotational images and also makes possible accurate measurement of the volume of organs or lesions within organs.

Radiographic technology, including CT, is based on differential absorption of x-rays by tissue and is inherently suited for imaging morphology. In contrast, Nuclear Medicine technology, including SPECT, displays the distribution of radionuclides in tissue. The tissue radioactivity, and thus the image, reflects the physiologic behavior of the tissue or organ being examined. Imaging with radionuclides, therefore, is best suited for demonstrating regional physiology and although morphology is demonstrated, the resolution is inherently lower than obtained with radiographic methods. Because SPECT is a three-dimensional imaging technique, however, it offers opportunities for quantitating organ physiology that were not possible with planar radionuclide imaging.

Practical Considerations

Compared to CT, PET, and NMR, SPECT is inexpensive. A complete system including a rotational gamma camera, computer, interface and acquisition and reconstruction programs, costs about thirty percent more than standard planar imaging equipment. A complete SPECT system can be purchased for as low as $220,000; one-third the cost of a CT unit which also requires considerable site preparation. The rotationa gamma cameras also have the advantage that they can b used for conventional planar imaging when not required for SPECT.

Another important consideration is time. From th patient's standpoint, a SPECT study takes about the sam time as a conventional Nuclear Medicine scan: about 3 to 45 minutes. For the laboratory, it is another story Rigorous quality control procedures are mandatory an consume several hours each week. One dail preparatory procedure consumes an hour of camer and computer time each day but does not requir technologist attendance for most of the procedure Image reconstruction time is dependent on severa factors including the number of slices required, th need for special angles of reconstruction (e.g. myocardial imaging with T1-201), the compute equipment and software, and the experience of th operator. Thirty to forty minutes of experience technologist time is required for most reconstructions i our lab. Computer equipment and programs ar becoming available which reconstruct automaticall during acquisition so that the tomographic images ar ready for inspection before the patient leaves th laboratory. Subsequent reconstruction using differen back-projection algorithms is also reduced to a few minutes.

Advantages of SPECT

SPECT has numerous advantages compared t conventional planar gamma camera imaging. Because i is tomographic, SPECT allows activity in organs an lesions distant from the body surface to be clearl separated from the background radioactivity i overlying and underlying structures which greatl increases the contrast between normal and abnorma tissue. Although SPECT does not have increased spatia resolution compared to planar imaging, the increase contrast significantly increases the sensitivity fo detection of small lesions. Tomography allows accurat localization of lesions within organs which is frequentl not possible with planar imaging. Planar imaging with Gallium-67 for abscess or tumor localization, fo example, is frequently nondiagnostic because o interfering activity in the bowel or a surgical incision SPECT imaging with Ga-67, however, is proving to be highly accurate.[1]

Because SPECT portrays the entire organ in three dimensions in computer memory, volumetric quantitation of organ or lesion size is possible as is accurate quantitation of tracer distribution and uptake. This feature will allow noninvasive measurement of regiona physiology and tissue behavior which has not been possible in the diagnostic setting in the past.

Clinical Applications: Cardiac SPECT Imaging

Unlike planar imaging, SPECT of the heart allows the posterior and septal walls to be examined without the superimposition of the anterior or lateral walls. Reconstruction along the long or short axis permits more precise localization of abnormalities (Figure 2).

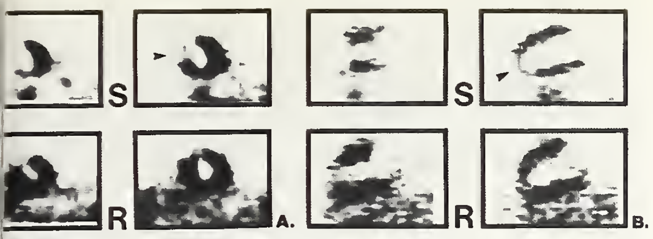

Figure 2
ECT images of myocardial Thallium-201 uptake during eadmill stress (S), and redistribution of activity three hours er (R). Oblique reconstructions perpendicular to the ptum (A), and parallel to the septum (B), demonstrate an ea of reversible ischemia in the distal septum and apex rrow) consistent with a lesion in the left anterior descending ronary artery.

veral centers have documented that tomographic allium-201 stress and/or rest imaging to detect and calize myocardial ischemia or infarction is significantly ore sensitive and accurate than the planar test.[2,3] ECT greatly increases the visualization of Tc-99m rophosphate-avid infarcts because radioactivity in os and blood pool can be clearly separated from take in the infarcted myocardium and spatial calization of the infarct is greatly enhanced. uantitation of infarct size with SPECT has been ported to be useful and accurate in predicting post-farction prognosis.[4]

Gated SPECT of the cardiac blood pool has been ported by a few centers although this technology is t yet commercially available.[5] Calculation of the solute volume and ejection fraction for each cardiac amber can be performed without geometric sumptions and represents a significant advance over e limitations of the planar technique and contrast ntriculography. This will be particularly useful for aluation of the right ventricle which has defied easurement by other techniques.

ECT of the Brain

SPECT improves the accuracy of brain imaging with nventional radiopharmaceuticals and may have plication in some inflammatory diseases of the brain, ch as Herpes encephalitis, which are not seen well or rly by x-ray CT. Functional brain imaging and uantitation of cerebral perfusion with tracers such as I-3 iodoamphetamine, is facilitated by SPECT and in elf represents a significant advance that will have idespread application. Brain imaging with iodo-nphetamine allows detection, localization, and sizing stroke before it is visible on x-ray CT (Figure 3 and 4).[6] is also useful for the localization of seizure foci in bilepsy[7] and evaluation of brain perfusion before and ter neurosurgical procedures.

orphologic Imaging

Other conventional planar morphologic imaging rocedures can be significantly augmented by SPECT. In one scanning, lesions in the shoulder, pelvis, vertebrae and skull are more easily localized with SPECT which will be useful in about ten to fifteen percent of patient exams. Abscess and tumor localization with labeled WBCs or Ga-67 is more accurate than planar imaging.[1] Localization of tumor with radiolabeled antitumor antibodies is undergoing extensive evaluation and SPECT has been reported to be far more accurate for this purpose than planar imaging.[8]

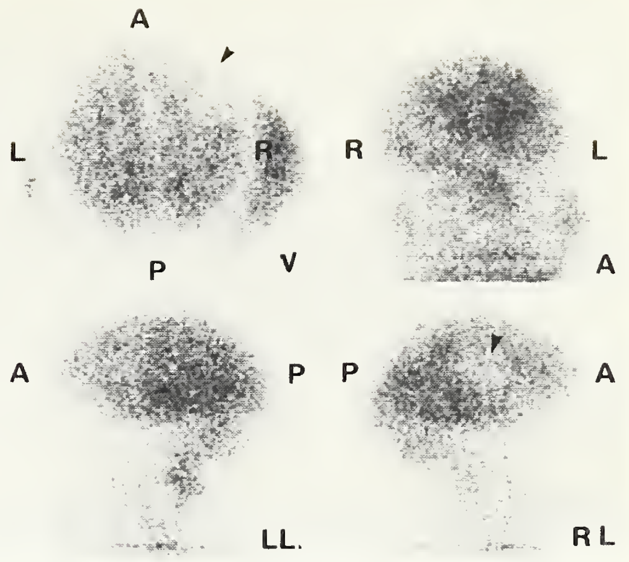

Figure 3
Planar images of I-123 Iodoamphetamine uptake in the brain in a patient with a recent stroke and a negative x-ray C.T. exam show an area of decreased activity in the right fronto-parietal area which was consistent with the patient's clinical presentation. (V=vertex, A=anterior, LL=left lateral, RL=right lateral).

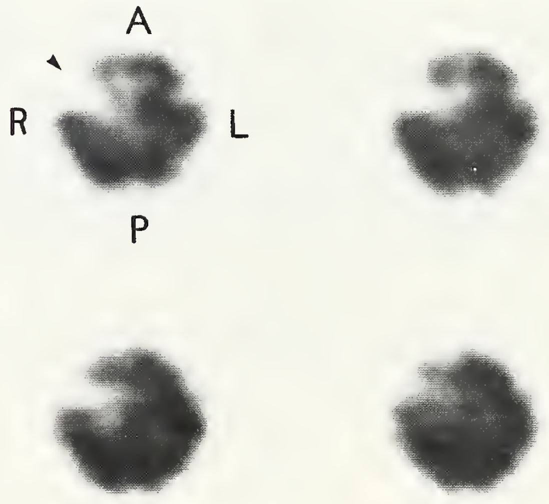

Figure 4
Transaxial SPECT images of brain iodoamphetamine distribution in the same patient as Figure 3 demonstrate the diminished uptake in the infarcted area in the right hemisphere with far greater definition and contrast than the planar images.

Other organs such as the liver, kidney and lung can be imaged by SPECT which augments planar imaging in approximately ten to fifteen percent of patients having these exams. Planar liver imaging has a sensitivity of 80% to 90% for the detection of metastatic disease and although this can be increased by as much as 10% with SPECT, the specificity is unchanged.[9] (Figure 5 and 6.) SPECT can also be used for serial measurement of liver, spleen and tumor size as a guide to prognosis and response to therapy. The specificity of the diagnosis of pulmonary embolism has been reported to be increased by SPECT.[10] How SPECT imaging of liver, spleen, lung, and kidney will fare against CT, sonography, subtraction angiography, and magnetic resonance imaging remains to be seen.

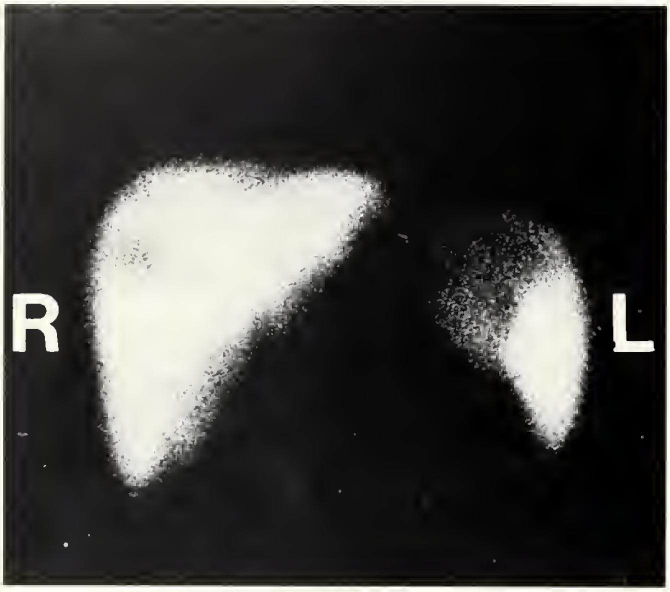

Figure 5
A planar Tc-99m sulfur colloid liver/spleen scan (anterior view) in a patient with colon carcinoma demonstrates a lesion in the right lobe of the liver.

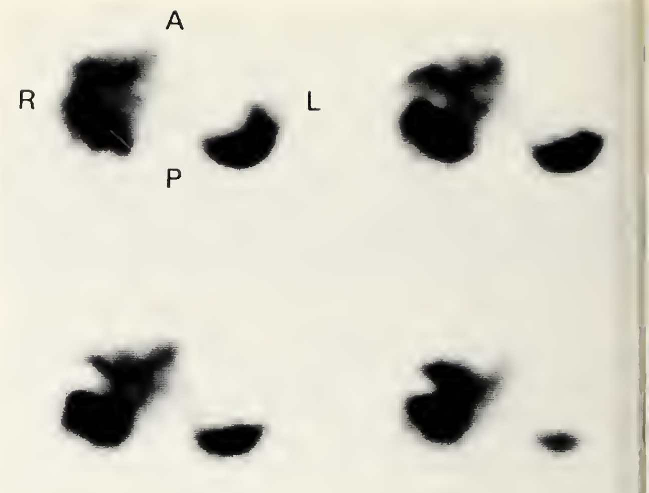

Figure 6
Transaxial SPECT images of the liver in the same patient Figure 5, show additional focal lesions in the left lobe. The si and location of the lesion seen on the planar scan are mo easily determined on the SPECT images.

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Special Articles

RGs: Where Do Our Patients o From Here?

obert R. Karpman, M.D.

The implementation of Diagnosis-Related Groupings to our health care system will inevitably cause a variety changes in the manner in which our patients are eated. One of the major impacts will be the early scharge of hospitalized patients, often in a "semi-ell" state. This implies that, although the patients no nger require twenty-four hour skilled nursing care, ey may not be able to cope entirely with their rehospital environment twenty-four hours per day ven days a week. A typical example of this would be an derly patient recovering from a hip fracture. By all tilization standards, this patient may be able to mbulate (with some external support), no longer equiring skilled nursing personnel and, therefore, be eemed independent and ready for discharge. These iteria, however, do not consider the patient's ability to are for themselves in their own house, to obtain roceries or even have a mechanism by which they may btain follow-up care by their own personal physician. he physician is then placed in a very awkward position. e tends to be the brunt of the patient's and the family's anxiety and often anger. "How could you possibly send my mother home in this condition! She certainly can't take care of herself, and I can't afford to take care of her on my own." These phrases are not expressed to the hospital or to the governmental agency setting the standards, but to the physician who, in their eyes, is responsible.

There have been huge sums spent on enlightening physicians, hospitals and other health care providers regarding the DRG System. How much was and is being spent educating the public remains an enigma.

What, then, are our options in order to both satisfy the needs of the hospitals' economic policies and yet provide satisfactory care to our patients who are unable to return to their pre- or near-prehospital environment? There are a whole variety of continuum of care possibilities that can be utilized and should be considered by the caring physician.

The key personnel involved in the transition from the in-hospital to outpatient care system is the social worker or continuing care nurse; both of whom are generally based in the hospital. It is their responsibility for planning for the needs of the patient following discharge and most of them have an excellent understanding and rapport with the various social agencies and programs that are available in the community. We, as physicians, should make an important effort to know these staff members and provide them with as much information as possible *not* on the date of discharge, but early in the patient's in-hospital care in order to allow for satisfactory time to arrange for all the necessary services. These staff members can certainly save the physicians a lot of grief and complaints, particularly those patients requiring a large variety of outpatient services. This also tends to relieve a significant amount of the family's fears regarding the posthospital care of their spouse or parents. Although these personnel are responsible for arranging these outpatient services, the physician, as mentioned above, should have some basic knowledge of the available services. These range from the skilled nursing care facility to in-home services and "meals-on-wheels."

There are two kinds of skilled care facilities; the extended care and the longterm care institutions. The longterm care facilities are essentially self-explanatory. However, there may be a significant difference in the "quality" of these facilities. Once again, the social worker or continuing care nurse may be quite helpful in evaluating those programs if the physician is unfamiliar with the various facilities. The short-term extended care facility is essentially limited to those patients who have the potential for rehabilitation in order to return to their prehospital environment within a defined period of time, usually thirty to ninety days. The rehabilitation unit in a hospital can serve as an extended care facility since these units have been initially exempt from DRGs. Other free-standing institutions are scattered throughout the Valley. Approximately fifty percent (50%) of those

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patients entering an Extended Care Facility return home, with another twenty-five percent (25%) returning to the hospital and the final twenty-five percent (25%) dying in the extended care facility. Other twenty-four hour care units include supervisory care services, senior citizen boarding homes, and adult foster care programs. All of these facilities, however, do not provide skilled nursing services.

The next step along the continuing ladder involves those services in which the patient initially returns to their home or family's dwelling. A rather new concept along these lines is the Adult Day Rehabilitation Hospital. This unit may be adjacent to an inpatient facility or may be free-standing. The purpose of the Day Rehabilitation Hospital is to provide skilled nursing care and rehabilitation services during the day hours only, allowing for the patient to return home in the evening hours, as long as there is adequate functional independence or home assistance. In addition to rehabilitation services, the Adult Day Hospital provides activity programs, social services, meals, and frequently transportation to and from the facility. It differs from a day care center in that skilled nursing and rehabilitation services are provided, implying a short-term program which may be reimbursable by insurance carriers. Besides providing direct services to the patient, per se, it also allows for daily respite care for the caring families who may be able to manage their family members during the evening hours, but may be required to participate in work activities during the day. It, therefore, relieves the family members of guilt feelings or feelings of inadequacy in managing for their family member.

The final step involves the multitude of home health services, ranging from the visiting nurse and physical therapy to "meals-on-wheels," homemaker and housecleaning services. These allow the patient to return to their own environment as quickly as possible which certainly has its own advantages. On the other hand, it may severely isolate the patient preventing he or she from participating in other social activities due to functional loss and immobility. In addition, it should be mentioned that those services provide only one to two hours of direct care per day. This leaves the remainder of the responsibility on the patient himself or other family members. Like the day rehabilitation hospital, these services are usually reimbursable by most insurance carriers. It is often difficult, however, to contact the persons providing the home health services, since they are constantly traveling throughout the city and often cannot be reached to change patient programs, particularly those requiring immediate attention.

In summary, there are a number of services that are available outside the hospital environment, which will allow our "semi-well" patients to recover completely in their own home environments. As physicians, we should be aware of those services and utilize them in order to satisfy the current cost containment programs without sacrificing patient care.

The Medical Consequences of Nuclear War:

A Curriculum for Medical Students at the University of Arizona College of Medicine

Barry D. Weiss, M.D.

Abstract

The College of Medicine at the University of Arizo offers a credit-bearing course for first year medic students on the medical consequences of nuclear wa Although the course was originally an elective, it is now required course. The University of Arizona is one of or eight medical schools in the country that offers required course on this subject.

Topics covered in the day-long course include th potential physical, medical and radiation effects of nuclear bomb explosion over Tucson and the possib medical response to such a disaster. Other topi include the emergency evacuation plan for Pin County, an introduction to the economics and politics the nuclear arms race, the health consequences workers involved in uranium mining and the productic of nuclear weapons. There are also small grou discussions about the propriety of physician involv ment in these issues.

Key Words: Nuclear Warfare, Education, Medical

Recently, there has been increasing public discussic about the risk of occurrence and potential dangers thermonuclear war. This discussion has taken plac largely in the lay press, but medical and oth professional journals have been publishing editorial ar scientific comment on the subject with increasin frequency.[1-6] In addition, physicians have organize themselves into professional organizations, such Physicians for Social Responsibility, and have mac formal political and ethical statements on the issue.[7]

The increasing involvement of physicians in th multifaceted issue has made it important for medic students entering the profession to have an objectiv knowledge base from which they may form opinior and participate in public discussion. During the pa three to five years, a number of medical schools hav addressed this issue by developing formal curricula c the medical consequences of nuclear war. The one the University of Oregon received the most attention; underwent widespread distribution under the auspic of Physicians for Social Responsibility.

From: Department of Family and Community Medicine, Arizo Health Sciences Center. Reprint request to Barry D. Weiss, M.D., 1 North Cherry, Tucson, Arizona 85719.

The College of Medicine at the University of Arizona so offers a course on this topic. The course is now in its cond year. Due to the importance of the issue and the neliness of the course material, it would be of interest r Arizona physicians to be aware of what is being ught at the University Medical School in Tucson.

ear 1: Selective Course

Each year, first year medical students participate in a ourse entitled Preparation for Clinical Medicine. aught largely by faculty of the Department of Family nd Community Medicine, the course includes stematic instruction in required core topics such as inical nutrition, geriatrics, alcoholism, and occu-ational and preventive medicine. In addition, a series f selective topics are offered. The student must choose ny two courses from a large list of selectives and is then equired to attend the two courses selected.

During the 1982-83 academic year, the Medical onsequences of Nuclear War course was first offered as selective within the Preparation for Clinical Medicine urriculum. It was chosen by approximately thirty ercent of the students in the class.

The course was divided into three ninety minute essions, plus a field trip. During the first session, the udents viewed "The Last Epidemic," a documentary lm produced by Physicians for Social Responsibility.[8] he film outlines the short and long-term health and cological effects of a nuclear bomb explosion. nformation from military leaders, physicists, and hysicians is included. Following the film, students iscussed their opinions on whether or not it is ppropriate for physicians to become involved in the olitical debate surrounding weapon deployments, ilitary budgets, and civil defense.

In addition, during this first class session the suggested eading material for the course was introduced. These ncluded several recent publications from medical ournals and the book, *The Final Epidemic*.[9-12]

The second class involved an in-depth lecture on the xpected effects of a one-megaton nuclear explosion ver the city of Tucson. The short term effects of thermal nd physical-mechanical injury were discussed and nticipated survival statistics were reviewed. Sub-equent discussion included the intermediate and long-erm effects such as radiation sickness, the spread of nfectious disease, and the (in)ability of the medical ommunity to respond to these problems.

During the third class session, three students made resentations on topics which were of interest to them. he presentations were based on reference materials upplied to the students. One student discussed the sychological problems of survivors of the nuclear ombings of Hiroshima and Nagasaki. Another gave an xtensive review of the Pima County Health Depart-nent's emergency plan to evacuate Tucson in the event f an anticipated nuclear attack on the city. A third tudent discussed how a nuclear warhead works and ddressed the issue of whether nongovernment upported individuals, such as terrorist groups, could realistically assemble and detonate a nuclear weapon.

The final class session was a field trip to one of the many Titan II nuclear silos that are located in and around Tucson. Titan missiles have been located in Tucson for nearly two decades and are currently being removed and dismantled because they are obsolete. Although nearly all of the students were Arizona residents and many were native Tucsonans, most had never seen one of the silos, even though the silos are easily visible from main automobile thoroughfares throughout the city.

A request was made to the United States Air Force for permission for the class to visit the inside of a missile silo. It was hoped that students could tour the facility and meet with Air Force personnel. The request was denied, however, on the basis of security risk. However, the students viewed the Titan silo in the Madera Canyon area of the Coronado National Forest near Green Valley. A security fence kept them approximately 100 feet from the silo. By chance, the field trip occurred on the day that the missile was being removed from its silo and the students had the opportunity to see it displayed on a flatbed truck. The field trip was very effective in impressing upon the students the reality of the nuclear arms race and the possibility of nuclear war.

Year 2: Required Course

The selective course was very successful. The majority of student evaluations were favorable and the course generated intense interest among the student body of the medical school. A direct result of the course was the formation of a student group of Physicians for Social Responsibility. This group has taken it upon itself to organize lectures and conferences on the topic of nuclear war by speakers from both within and outside of the medical school.

In addition to interest among the students, interest in the course by college of medicine faculty was of sufficient magnitude that the course will be a required part of the Preparation for Clinical Medicine curriculum during the 1983-84 academic year. The course will be presented as a single, daylong session with required attendance by all first year medical students. The total hours of instruction will be similar to that of the first year; the significant change is that the course will be required.

A recent Physician for Social Responsibility affiliated survey of United States medical schools found that there are only seven other medical schools which offer required, credit-bearing courses on the medical consequences of nuclear war.[13] In each instance, the time devoted to the topic is three hours or less. The required daylong session at the University of Arizona places our medical school at the forefront of the movement to educate future physicians in this subject area.

The required course will be offered for the first time in the Spring of 1984. It will include much of the same basic information taught in the first year with several additions and modifications based on suggestions by students who participated in the original class. The first significant modification is that the recommended reading will be *Last Aid: The Medical Dimensions of Nuclear War*, a series of edited monographs by the International Physicians for the Prevention of Nuclear War.[14] Entries by physicians from the United States, Japan, and the Soviet Union are included. The text is more easily read and better illustrated than *The Final Epidemic* and it should be well accepted by the students.

The other significant change in the course is that the field trip will be eliminated. Since the course is being presented in one day, the travel time for a field trip is unavailable. It would require the elimination of other more important material from the course. In addition, most of the Titan silos are now empty and such a field trip would, therefore, be less meaningful.

The core of the course will continue to be an analysis of a hypothetical nuclear bomb explosion over Tucson. The basic destructive forces of nuclear weapons will again be reviewed and the anticipated numbers and types of casualties will be discussed.

The emergency evacuation plan for Pima County will be presented by a faculty physician. Since there is currently discussion in the medical literature about the feasibility of such disaster plans, each student should have some knowledge of the local plan and be able to judge whether it is realistic and workable.[7]

The course will include an in-depth review of acute radiation illness and the long-term effects of radiation exposure such as might be experienced in the setting of a nuclear war. In addition, there will also be a discussion of the health consequences experienced by workers involved in the mining of uranium and the production and testing of nuclear weapons.

The students will also be given an introduction to the politics and economics of the nuclear arms race. There will be a discussion of the effects of defense spending on health care policies in the United States. A presentation by the university's political science department will made about the factors which contribute to stabilizati versus destabilization of the nuclear arms race and t risk of war. Current and future arms negotiati strategies will also be reviewed.

The day will conclude with small group discussions l by college of medicine faculty. The topics to addressed in these discussion groups will center arou the propriety of physician involvement in the nucle weapons debate and the antinuclear movement.

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re prescribing, see complete prescribing information in
F CO. literature or *PDR*. The following is a brief summary.

ARNING
is drug is not indicated for initial therapy of edema or
pertension Edema or hypertension requires therapy
ated to the individual. If this combination represents the
sage so determined, its use may be more convenient in
ient management. Treatment of hypertension and edema
not static, but must be reevaluated as conditions in each
ent warrant

raindications: Concomitant use with other potassium-
ng agents such as spironolactone or amiloride. Further use
una, progressive renal or hepatic dysfunction, hyperkalemia.
xisting elevated serum potassium. Hypersensitivity to either
ponent or other sulfonamide-derived drugs.

ings: Do not use potassium supplements, dietary or other-
unless hypokalemia develops or dietary intake of potas-
is markedly impaired. If supplementary potassium is
ed, potassium tablets should not be used. Hyperkalemia
occur, and has been associated with cardiac irregularities. It
ore likely in the severely ill, with urine volume less than one
day, the elderly and diabetics with suspected or confirmed
insufficiency. Periodically, serum K^+ levels should be deter-
d. If hyperkalemia develops, substitute a thiazide alone,
ct K^+ intake. **Associated widened QRS complex or arrhyth-**
requires prompt additional therapy. Thiazides cross the
ntal barrier and appear in cord blood. Use in pregnancy
res weighing anticipated benefits against possible hazards,
ding fetal or neonatal jaundice, thrombocytopenia, other
rse reactions seen in adults. Thiazides appear and tri-
rene may appear in breast milk. If their use is essential, the
nt should stop nursing. Adequate information on use in
ren is not available. Sensitivity reactions may occur in
nts with or without a history of allergy or bronchial asthma.
ble exacerbation or activation of systemic lupus erythe-
sus has been reported with thiazide diuretics.

autions: Do periodic serum electrolyte determinations (par-
rly important in patients vomiting excessively or receiving
nteral fluids, and during concurrent use with amphotericin B
rticosteroids or corticotropin [ACTH]). Periodic BUN and
n creatinine determinations should be made, especially in
derly, diabetics or those with suspected or confirmed renal
iciency. Cumulative effects of the drug may develop in
nts with impaired renal function. Thiazides should be used
caution in patients with impaired hepatic function. They can
pitate coma in patients with severe liver disease. Observe
arly for possible blood dyscrasias, liver damage, other idio-
atic reactions. Blood dyscrasias have been reported in
nts receiving triamterene, and leukopenia, thrombocyto-
, agranulocytosis, and aplastic and hemolytic anemia have
reported with thiazides. Thiazides may cause manifestation
ent diabetes mellitus. The effects of oral anticoagulants may
creased when used concurrently with hydrochlorothiazide;
ge adjustments may be necessary. Clinically insignificant
ctions in arterial responsiveness to norepinephrine have
reported. Thiazides have also been shown to increase the
yzing effect of nondepolarizing muscle relaxants such as
urarine. Triamterene is a weak folic acid antagonist. Do
dic blood studies in cirrhotics with splenomegaly. Anti-
tensive effects may be enhanced in post-sympathectomy
nts. Use cautiously in surgical patients. Triamterene has
found in renal stones in association with the other usual
lus components. Therefore, 'Dyazide' should be used with
on in patients with histories of stone formation. A few occur-
s of acute renal failure have been reported in patients on
ide' when treated with indomethacin. Therefore, caution is
ed in administering nonsteroidal anti-inflammatory agents
Dyazide'. The following may occur: transient elevated BUN
eatinine or both, hyperglycemia and glycosuria (diabetic
n requirements may be altered), hyperuricemia and gout,
lis intoxication (in hypokalemia), decreasing alkali reserve
possible metabolic acidosis. 'Dyazide' interferes with fluores-
neasurement of quinidine. Hypokalemia is uncommon with
ide', but should it develop, corrective measures should be
such as potassium supplementation or increased dietary
of potassium-rich foods. Corrective measures should be
ted cautiously and serum potassium levels determined.
ntinue corrective measures and 'Dyazide' should labora-
values reveal elevated serum potassium. Chloride deficit
occur as well as dilutional hyponatremia. Concurrent use
chlorpropamide may increase the risk of severe hypo-
mia. Serum PBI levels may decrease without signs of thyroid
bance. Calcium excretion is decreased by thiazides.
ide' should be withdrawn before conducting tests for para-
d function.

ides may add to or potentiate the action of other antihyper-
e drugs.

tics reduce renal clearance of lithium and increase the risk
um toxicity.

rse Reactions: Muscle cramps, weakness, dizziness, head-
dry mouth; anaphylaxis, rash, urticaria, photosensitivity,
ura, other dermatological conditions; nausea and vomiting,
ea, constipation, other gastrointestinal disturbances; pos-
hypotension (may be aggravated by alcohol, barbiturates,
rcotics). Necrotizing vasculitis, paresthesias, icterus,
reatitis, xanthopsia and respiratory distress including pneu-
tis and pulmonary edema, transient blurred vision, sialade-
and vertigo have occurred with thiazides alone. Triamterene
been found in renal stones in association with other usual
lus components. Rare incidents of acute interstitial nephritis
been reported. Impotence has been reported in a few
nts on 'Dyazide', although a causal relationship has not
established.

lied: 'Dyazide' is supplied in bottles of 1000 capsules;
e Unit Packages (unit-dose) of 100 (intended for institu-
use only); in Patient-Pak™ unit-of-use bottles of 100.

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J-4044 January 1984

Presidential Address

The Physician — Fully Alive!

Earl J. Baker, M.D.

President's Inaugural Address, presented to the Arizona Medical Association House of Delegates, April 7, 1984, Scottsdale Conference Center and Resort Hotel, Scottsdale, Arizona.

Bishop Thomas O'Brien, Dr. Paul Starr, Fellow Officers, Staff and House of Delegates, may I ask that you isit awhile with me—the past, the present, and the yet o be?

Wise Socrates' last words as he drank the hemlock were: "Crito, we owe a cock to Aesculpius," thus praising his healing God for both a quiet death and a quick passage into a far better world. To whom do I owe uch a paean? Some are recalled: Maimonides, great heologian-physician, whose tomb I visted in Tiberius one year ago. While listening there to a beautifully sung Kaddish, I recalled my 90 percent Hebrew classmates at New York University who successfully petitioned the Dean into our reciting the oath of Hippocrates at graduation—that same oath now sadly deleted from oday's ceremony in part for reasons of convenience or materialism. Students at the University of Arizona, Hippocrates (statue) 2300 years of tradition stands outside your door—invite him back into your next graduation!

I like to recall my Irish mother, an R.N., welcoming my ather's patients into our office-home, and that same Nebraskan W.A.S.P. father accepting chickens and obsters as payment during the depression years. Good physician, he was humble, but secure in his ethical beliefs, yet finding time to make a weekend fisherman, duck hunter of me, even though we lived in midtown New York City. Then on to the golden years of cardiac surgery, when I watched Charles Bailey do a closed commissurotomy, marveled at Walter Lillehei cure a etralogy of Fallot, visted Charles Hufnagel, father of the prosthetic heart valve, and a host of others, most especially Robert Anderson, then in Los Angeles, who brought open heart surgery to Tucson in 1959. Finally I recall our team at St. Luke's Hospital in Phoenix who did the same three months later.

Quo Vadis, today? In medicine we face problems of patient care, both strange and seemingly never ending. Four of these I'll try to review:

First: *The Cost of New Technology*

Rene Laennec opened this age with his stethoscope, thus "peering" for the first time into the body cavity and giving birth to the internist — yet — mirabile dictu — doing this in the midst of the French Revolution with a guillotine thudding poor heads within the sound of his home! Little did this young Frenchman envision the marvel and cost of technology today! Lewis Thomas has further depicted the problem as *Non-technology*: The cognizant, caring type, patient support of our medical-pediatric colleagues, done always with compassion and now confirmed as not only crucial, but also as the most cost effective form of treatment. Then the *Halfway Technology* of transplant surgery, coronary surgery and end stage renal dialysis, all highly sophisticated and yet, in Lewis' words, "Profoundly Primitive," since accomplished with no real understanding of the underlying mechanism or cause of the disease. Finally, *High Technology*: the abolition of smallpox and polio, the curing of tuberculosis, typhoid fever — therapy, simple —inexpensive — easy to deliver. Think back to only 1935 when typhoid meant 50 days of hospitalization, yet today is immediately responsive to a few tablets of chloramphenicil! Such evolution must continue, must be our final pathway to technological cost control.

Second: *Cost Containment with Quality Care*, was well reviewed yesterday. However, I must salute John Oakley who, throughout all the agonies of AHCCCS, never once deviated from the theme of quality medicine. His legacy of 85 physicians' work, incorporated into 46 pages of sound rules and regulations, sits on our legislators' desks, hopefully to be fully implemented. The Arizona Coalition For Cost Effective Quality Health Care has clearly demarcated the fiscal reality and injustice of hospital cost shifting, contrariwise the Arizona Hospital Association has a real problem with Medicare "DRGs," potentially increasing this shift. Such expense with now the added burden of 85 percent AHCCCS payment may well cause our small and rural hospitals to bankrupt and disappear.

In this travail I must salute Clyde Kurtz and Herbert Winograd for long hours of thought and exhortation, Governor Bruce Babbitt, Senators Robert Usdane and Carl Kunasek, Representatives Burton Barr, Bart Baker and Bill English for trying in every possible way to legislate in this, our brave new world, and thus avert Orwells, 1984. In this morass only those who have no sin, be they physician, patient, trustee, administrator, businessman, or insurance provider—may cast the first stone! Neopito Robles and our Board's posture has been to strive for a legislative solution with particular emphasis on an independent, long-term, data bank established for fact accrual, so as to avoid the New Jersey status of being a three year, all-payor "DRG" state, yet having in 1983 a rise in hospital costs of 15.4%—with no apparent solid answer as to how or why this occurred!

As your President, I would like to inform you that the Board of Directors of the Arizona Medical Association today, by unanimous vote, has stated:

1. All Arizona physicians are in full agreement as to the presence of a serious medical cost containment problem.
2. CON is due to expire in August '84 with a resultant vacuum and possible ingress into Arizona of purveyrs of poor patient care.
3. This problem should not be solved by an initiative process which would now include a constitutional amendment, severely regulatory and frozen in its usage for up to ten years.
4. We will individually accept a statewide freeze on our patient charges by resolution during this meeting.

Therefore, on behalf of our patients, the residents of Arizona, we request:

1. A two-year interim *strict* legislation which will freeze hospital charges.
2. Establishment of an impartial study commission with equal hospital-coalition representation, together with representatives of the patient/physician community, chaired by Dean Louis Kettel of our College of Medicine, to immediately begin to accumulate data, such as the effect of the New Jersey All-Payor DRGs and effect of the Arizona Medicare DRGs, etc. Its conclusion to be presented to the Arizona Legislature in two years' time. This commission to be funded via the Legislative process.
3. Any further legislation passed in association with the above, be flexible enough to allow necessary amendment at the end of two years' time.

Third: The Field of *Professional Liability*

In 1975, with Arizona deserted by all carriers, Jack Brooks delivered our own, Physician-Insurance Plan of "MICA" and this fine enterprise has kept Arizona malpractice premiums affordable. However, the recent rise in both claims and monetary awards once again threatens our very ability to practice and adds massively to the cost of patient care. Our fellow citizens, the people of Arizona, must be fully informed about the sometime *hypocrisy* of the contingency fee system! This process, originally envisioned to aid the wrongly-treated poor, has been subverted into multi-million dollar awards by a very small group of lawyers, some of whom, in my personal judgment, could be called legal pirates. This uncontained, added cost, approximately ten percent of present charges, taken from patient and hospital care, must be publicly nailed to such attorneys' doors.

Fourth: Bioethics and the Pricing of Life Itself

Contrary to the terrible sickness and ethical ignorance of Colorado Governor Richard Lamm, the Arizona Medical Association is truly proud of caring legislation established this year. In particular, one bill endorsed by Edward Sattenspiel mandates maximum life support for any fetus believed *viable* at the time of an abortion
such now estimated at 24 weeks. A second bill mak
moral and medical sense of Baby Doe, wherein wh
Belton Meyer and Scott Chisholm established
bioethics committee and backed a medically indicat
approach for the defective newborn, Bill Scott, our o
Solomon, concomitantly preserved that most spec
bond of love between obstetrician and mother
insisting that any such medical-ethical committ
function in an advisory-only capacity.

In this entire area of ethical eruption, philosoph
Paul Menzel of Yale in his new book, "Medical Costs
Moral Choices," has listed three principles for medi
care: First, *Maximum Human Welfare* which, amo
other axes, embodies the phrase, "Cost Worthiness
defined as care which brings patients and other affect
parties benefits whose value is at least as great as th
which would be obtained by using the same money
satisfy other needs or desires, as food or clothir
instead. Next, *Justice as to Distributional Equality*, i.
equal care for one and all, and finally, *Individu*
Autonomy: consent or respect for each human bein
personal, decision-making process. Such clear vision
mandatory for the proper use of our finite hum
resources.

And now to some synthesis of thought for t
tomorrow. First, let us reach out to our young docto
having ground their way through an ever harder colle
and residency regime, they graduate with an average
$30,000 to $40,000 debt and are told that they are
surplus commodity — possibly one third, too numero
by 1990.

Possible escape routes: We still need family a
emergency room physicians and most especially tho
doctors who would brave the field of preventi
medicine which is now receiving massive corporat
industrial support. Further, we desperately nee
physicians in the field of research. The National Institu
of Health has documented a drop of almost fifty perce
to those awarded post-doctoral traineeships. Teilha
De Chardin has styled true research as the scientis
special area of spirituality wherein the "high" of
potential new discovery may bring the researcher clos
to the Creator's work—what a challenge!

For all of us, the principle, "that we are here not to g
all we can out of life for ourselves, but to try to make t
lives of others happier." This is the basic Judeo
Christian Golden Rule of do unto others as you wou
have done unto you. I'll tell you a secret; in so doin
you'll be happy — your patients will do well and final
your practice will be solvent.

For those of us in "high-middle age," I say, we ha
three goals. One you well know: *Compassion*, the abili
to totally help and share, to simply put your arms arou
the crying, destroyed patient. The second much harde
to stay *competent*. Read, attend meetings, a
remember Sir William Osler's dictum of surroundi
yourself with youth via any teaching capacity.

Finally, and as a last hurrah — for those of you happi arried, yet who, in uncertain conscience, still marvel at e wonder and beauty of the opposite sex, I give you e prayer of that early life Bacchanalian Reveler, ugustine who, when sorely tried, prayed, "O Lord, hastity — But not yet!" Thus, share your compassion, rive for competency and stay alert with: "Not yet, Not t!"

I've said for too long and now probably in the opinion my beloved wife, Joan, too much. I'll close by firming that by every poll we remain the most spected of the earning professions. This, because our actice is an art, not a trade — a calling, not a business. It embodied in the word *Trust*. Our principal objective is render service to humanity with full respect for the gnity of man. In this world of 1984, we, despite our oblems, should be happiest of all human beings, since, virtue of this, our noble profession, we may well pire to fulfill that great statement of Iraneus: "The ory of God is man fully alive!" Fellow physicians, you, ch one, are blessed with that full potential of being lly alive and thus — I salute you!

arl J. Baker, M.D.
resident
rizona Medical Association

erspectives of the ast President

eopito L. Robles, M.D.

nmediate Past President, Arizona Medical Association)

Eleven months ago, the physicians of Arizona estowed upon me the honor of serving as President of e Arizona Medical Association. I promised you, and yself, I would serve in this capacity to the very best of ability, to carry out the duties of the Presidency. I ope I have continued the long tradition of my edecessors of being able to speak for the physicians of izona with honor, dignity and respect which is so portant to our profession, especially in these trying d changing times.

Today we are at the crossroads between old traditions d a rapidly changing world of health care delivery to r patients here in Arizona and all over this great untry of ours. Health care costs are rapidly escalating, d no one group is able to bring about the proper ethod of controlling these escalating costs. However, your spokesman, I have tried to convey, to anyone no is willing to listen, that we physicians hold dear to r hearts the precept that the quality of health care elivered to our patients *shall not* be subservient to cost-ntainment; that we as providers are as concerned about the escalating cost of health care as anyone, and have been doing our share in the field of cost reduction without sacrifice of quality. In my dialogues with legislators, businessmen and consumer groups, I make certain that they know that the physicians of Arizona are able and willing, even eager, to participate in any group discussions toward reaching a goal which I perceive to be of primary concern for almost everyone, i.e., how we can slow down the escalation of health care costs. I believe now, more than ever before, that we should act as advocates for our patients so that they continue to receive the best care in the world, second to none, at affordable costs.

The past year has been a busy and memorable one, to say the least. I have visited all the counties of our state, except Santa Cruz County. However, I have an appointment next month to meet with them, also. I have tried to make known to all our colleagues that the Arizona Medical Association works for all the physicians in our state, that the activities of ArMA benefit every physician practicing in the state, and have asked those who are not members to join hands with us, so we can have strength in numbers and unity in purpose. Our rural physicians, as well as our colleagues in the metropolitan areas, must continue to present a unified voice in matters pertaining to health care delivery in our state. I sincerely believe that ArMA is the best spokesman for all of us.

In the past several years, our dialogues with our legislators have been improving. I believe this is because of the increasing number of physicians who have been getting more interested and actively participating in our legislative activities; and we are now noticing definite favorable results in bills being passed which are favorable to the physicians of Arizona, as well as those bills which are not to the advantage of our patients being defeated in the legislative process. Clyde Kurtz has performed a superb job as chairman of our Legislative Committee and, together with Allan Stanton, our most able and effective lobbyist, supported by Kevin and Alice, have produced what I would call a winning team. I feel that we owe these people our gratitude for a job well done.

Of course, the chairmen of the different committees and their members have done an outstanding job in continuing to perform a very important function for our members in meeting periodically and deliberating on subjects affecting all the physicians in our state.

I would certainly be remiss if I did not mention that AHCCCS (Access) is upon us, and is continuing to have growing pains. It is a most popular subject within this state, and outside the state, as we try to find our way with this innovative way of delivering care for medical indigents. I, personally, believe that we should continue to make ourselves available for input in any new area to improve the implementation of this program. I feel we owe it to our legislators, our governor, and our indigent patients to expend every effort to make a sincere contribution to make this work. If it fails, it will be that it failed on its own deficiencies, so we as physicians cannot be blamed for that failure.

My job as your President could not have been accomplished without the strong support and guidance of our able and respected Executive Vice President, Bruce Robinson, who helped me in the performance of my numerous and varied presidential duties. His eternal vigilance in seeing that the physician's image is held high and protected from intrusions by others is very commendable indeed. His knowledge of the intricacies of working with others has been most inspiring and, needless to say, productive for all of us.

This past year was one of apprehension because of the deunification of Maricopa County from the state. We were concerned as to possible significant loss of ArMA membership. However, I am happy to say that we "held our own"—losing some, and gaining some new members. The Ad Hoc Membership Committee, under the leadership of Neil Ward, and the many physicians who have helped by talking to our nonmember colleagues, have been most effective; and we owe them eternal gratitude.

I would again solicit the help of all members of ArMA to try to involve nonmembers. We certainly would be a larger and stronger Association, accomplishing more for each of us, if each one of you could bring to the fold at least one new member, or convince those who have dropped membership to rejoin us. I have always believed that the best investment a physician can make toward preserving as much as possible our current pluralistic delivery of health care to our patients is his/her payment of dues to organized medicine at all levels.

Rachel, our three sons, Robert, Peter and Jimmy, and I sincerely appreciate the honor you have given me in having me serve as your President. The year has been a most memorable and enlightening year for me and I will cherish the friendship, help and understanding that you all have extended to me.

Thank you! . . . And have a nice day!

President
Earl J. Baker, M.D.

President-Elect
Gary L. Henderson, M.D.

Vice President
Neil O. Ward, M.D.

Secretary
Richard L. Collins, M.D.

Treasurer
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Neopito L. Robles, M.D.
Jay W. Smith, M.D.
Volker K.H. Sonntag, M.D.
Sidney C. Werner, M.D.

Correspondence

Editor:

I think your esteemed editor, Dr. Block, must have been undergoing an “Insulin reaction” as he wrote his article, “New Role for Chiropractors” in he health field. He moves through his hree column page editorial with the kill of a used car salesman, bringing you to a shined up, cleaned up, older model Edsel that looks nice, but has never run well and will never function. His bottom line seems to be that chiropractors care for people and pend time with people, despite giving reatment of unknown benefit.

We see chiropractors somewhat differently in our practices. I review many charts of patients receiving unnecessary volumes of chiropractic reatment in response to automobile njuries. The chiropractors are converting their black magic to green magic utilizing the established modality of omnipresent insurance coverage.

Today’s vastly restricted funds for medical care should make us see that every dollar spent on medical care is of value. If that dollar is to be spent on questionable nutritional supplements, markedly overpriced vitamins and nferior counseling, we in medicine are not doing our job.

I think prior to any medical spokesman or editor speaking out as Dr. Block has done on other classes of professional providers, he ought to personally visit some of their schools and observe their training and observe he quality of their conventions and meetings. If indeed he does not pick up anything truly educational, he might get some good tips on marketing techniques.

Stephen R. Stein, M.D.
Valley Orthopaedic Group, Ltd.

ditor:

I read your thoughtful editorial egarding chiropractic, and was stonished at your conclusions. As a practicing neurologist, I have the opportunity of seeing patients who have been seen by chiropractors at one ime or another for “therapy” in order o treat their various musculoskeletal complaints, etc. I can assure you that manipulation has not been deleted rom the armamentarium of even the new young chiropractors based on what I have seen in my own practice.

Therefore, I do not think that we can make the assumption, that chiropractic has made any reasonable metamorphosis from its standing in my mind as an unscientific cult. Surely, you are aware of documented cases in medical literature particularly in neurological and neurosurgical literature, in which patients have been harmed irreparably by “chiropractic treatment.” I refer specifically to cases of cerebral infarction, brainstem infarction, the rupture of cervical discs, and spinal cord injuries, etc., which are adequately documented throughout the literature.

Just because prominent and allegedly sophisticated individuals turn to chiropractic for “treatment” does not mean that we as doctors of medicine should stand by and give it our tacit approval. Quite the contrary, I feel that we should maintain the standards of our profession, and shun “therapy,” that not only is of no use, but may potentially be harmful or lethal depending on the individual circumstances. It makes no sense to me to encourage this sort of cult when the very ailments that you refer to in your editorial can be safely treated by proper medical care and diagnosis, and in the case of patients of musculoskeletal complaints, referral to a qualified physical therapist. I am also concerned about the fact that if we do not continue to discourage patients from seeking these alternate forms of “therapy” that there will be patients that will suffer not only from the direct effects of this “treatment,” but also from delayed diagnosis.

I believe that our Association should continue to oppose any form of tacit acceptance of these individuals in the ranks of health care providers. Until they measure up to our standards and until they demonstrate that their training and educational background is the equivalent of a medical school or a school of osteopathic medicine, I will continue to resist these efforts of encroachment.

Howard E. Weinstein, M.D., F.A.A.N.
Consultants in Neurology, Ltd.

Editor’s Response:

Dr. Stein’s major points are that chiropractors are doing unnecessary therapy and generating huge incomes in the process. Dr. Weinstein adds that delays in correct diagnoses could also be damaging to patients and their therapy could be dangerous. Furthermore, Dr. Stein feels that we in medicine are not doing our job if “questionable nutritional supplements, markedly overpriced vitamins and inferior counseling” are being propagated by such practitioners. Dr. Stein correctly points out that I feel that “chiropractors care for people and spend time with people, despite giving treatment of unknown benefit.” We thus are in agreement that chiropractors are supplying something we aren’t, they are charging a lot of money for it, and may not be doing anything. What then are we to do? I would like to propose that we not ignore this situation any longer. As public health representatives we must speak out and deal with this difficult situation. We must offer suggestions to improve the system. If their therapy is irrational and of no benefit, then we need to prove it and with sound scientific evidence dispel thoughts to the contrary. It is my feeling that we must deal with the situation and not ignore it. I believe Dr. Weinstein’s comments are appropriate but do not go far enough. Hopefully this interaction will prompt those interested to form a study group through the auspices of the Arizona Medical Association to deal with the above problems and find solutions.

Marshall B. Block, M.D.
Editor
Arizona Medicine

Editor:

I read with interest the article by Drs. Ward and Berry concerning intranasal steroid treatment. The treatment is a recognized and accepted one in our specialty utilized by many physicians. Your readers should be aware, however, that not all otolaryngologists feel that intranasal steroid injections are appropriate. There have been sporadic reports of blindness due to retrograde flow of material into the ophthalmic artery. This dread complication is presumably prevented by proper injection technique. My personal objection is that the treatment is unpleasant and possibly meddlesome. There is no evidence to show that an injection of steroid into the inferior nasal turbinate has any different effect from an injection of the same material into the deltoid muscle. There is no question that the latter is effective for treatment of seasonal allergy. My preference, however, is that if a patient needs occasional steroid treatment for allergic symptoms, I would rather give it orally where I have more day to day control than by a six weeks repository injection which I cannot recall.

Richard D. Zonis, M.D.

Editor:

It may come as no surprise to the membership that they have contributed from 1974-1983, $76,000 in "Scholarships" to needy medical students.

The members are to be congratulated upon the fact that this *is not* a revolving fund - at low or no interest.

Presumably the students are *indeed grateful* for this financial assistance - which does not obligate them to repay - and thus assist those who follow. Such generosity by the Arizona Medical Association is indeed noteworthy.

John W. Kennedy, M.D.

Editorial

Total Joint Replacement Update

When viewed from the vantage point of the current state of the art of total joint replacement, the era of the bionic man has arrived. In fact, its arrival transpired during the 1970s when dependable and proven designs of prosthetic replacements were developed for hips, knees, ankles, shoulders, elbows, wrists, and a few of the smaller joints of the hand and feet. Clinical experiences with total joint replacement now span over 20 years, dating from the first hip replacement which was performed in England in 1962. The principles of securing a prosthetic plastic-and-metal prosthesis to the skeleton by use of a grouting agent, methylmethacrylate cement, remains the standard by which other newer techniques must be judged.

Today the entire field of total joint replacement is a fast-paced one. Techniques are constantly being refined and improved and newer, stronger, and more durable materials are being developed. Today's arthritis patient in need of an artificial joint can take comfort in the realization that dependable and predictable results are presently at hand. Certain factors, however, must exist if the dependable results are to be anticipated. These factors include following precise indication for surgery, correct employment of a prosthetic design matched to the particular patient's need, precise technical performance of the operative procedure, and postoperatively, patient avoidance of abusive overactivity for the remainder of his or her life. Provided that all of the above four conditions exist, the success rate for most total joint replacements should exceed 90% in accomplishing pain relief, increased mobility, and improved functional usage.

Several problems remain unsolved. One such problem is the time-dependent inclination for the devices to loosen from the supporting bone. The present rate at which aseptic loosening occurs is estimated at approximately 1% per year of implant usage. A second problem area is implant failure, in the form of excessive wear or breakage.

Much investigative effort has been devoted to the potential of eliminating the grouting cement, methylmethacrylate, to solve the first and most pressing problem, aseptic loosening. This has been recognized to be the weak link in the entire system. Today, the most exciting and promising solution to the problem of loosening lies in the concept of a biological fixation of the device to the living skeleton. This has been achieved by the fabrication of prosthetic devices which possess a microscopically-porous surface. It has been shown in experimental animals and also in some human clinical situations that such devices can be rapidly attached biologically to the skeleton by the ingrowth of fibrous and/or bony tissue. The techniques, however, demand a much greater degree of technical skill, as preciseness of fit within the bony bed is absolutely mandatory for success.

Research effort is currently underway throughout this country and abroad to develop better and stronger prosthetic materials. The use of ceramic implants holds some promise, as does the use of titanium metal. Both have been shown to be extremely durable and quite nonreactive as far as any potential host response.

Total joint replacement for the arthritic patient continues to be one of the most dynamic and exciting fields of medicine in today's world. Orthopedic surgeons are coming closer to their goal of being able to offer the patient dramatic relief of pain, deformity, and immobility by the implantation of dependable, long-lasting, prosthetic parts. The University of Arizona is actively engaged in a variety of research projects aimed at the improvement of such devices. During the 1970s, three devices were designed in the biomechanical laboratory. These included the first artificial wrist prosthesis to be designed and clinically implemented in the United States. Total elbow and a total knee prosthesis have since been developed. While medical students and other health professionals learned a great deal from these activities, the citizens of Arizona profit from the immediacy of the availability of this technology and expertise.

Robert G. Voltz, M.D.
Professor, Orthopaedic Surgery
Louis J. Kettel, M.D.
Dean

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Lawrence Stern, M.D.

Managing Editor
Bruce E. Robinson

Editorial Assistant
Linda N. Brown

Briefly Noted

Earl J. Baker, M.D., Phoenix, and **Bess Morris,** president of the Arizona State Board of Nursing, presented the first annual Care awards given to outstanding nurses in Arizona. The ceremony, held May 4, was sponsored by the Arizona Hospital Association.

Thomas E. Bittker, M.D., Phoenix, has been elected as a member of the American College of Psychiatrists.

Bradley Gordon, M.D., Scottsdale, and **David K. King, M.D.**, Phoenix, were among the 248 new Fellows elected to the American College of Physicians (ACP).

Burt Faibisoff, M.D., Flagstaff, spoke on plastic surgery at the April meeting of the Coconino Chapter of the American Association of Medical Assistants.

William James Howard, M.D., and **John R. Green, M.D.**, Phoenix, were guest speakers at a one-day conference for the physician on "Abuse and Neglect of the Elderly." Dr. Howard also discussed hypertension on the June **Health Highlights** Cable TV program co-sponsored by ArMA and Samcor's Video Services.

John F. Kahle, M.D., Flagstaff, was installed as president of the American Academy of Family Physicians during the Academy's spring meeting in Carefree. Dr. Kahle also serves as an alternate delegate to the American Medical Association.

H. Belton P. Meyer, M.D., Phoenix, is one of six members appointed by Governor Bruce Babbitt to the Statewide Health Coordinating Council (SHCC). **Louis J. Kettel, M.D.**, Tucson, is SHCC vice-chairman. The Council is charged with responsibility for coordinating state and local health planning activities.

William C. Scott, M.D., Tucson, has been nominated to the Council on Scientific Affairs of the American Medical Association, one of four councils whose members are elected by the House of Delegates. Elections will be held at the 1984 Annual Meeting in Chicago.

The Arizona Medical Association is cooperating with KTVK TV, Channel 3, Phoenix, in the production of **"Healthbeat,"** a health and medical information feature presented every Wednesday on the 6:00 p.m. news and repeated every Thursday morning before the *Today* show. Physicians interviewed in April were **Alan L. Gordon, M.D.**, "How to Talk to Your Doctor," **Bryan R. Updegraff, M.D.**, "Allergies," and **Russell P. Chick, M.D.**, "Little League Elbow."

Arizona Medical Association members participating in the State Bar of Arizona's continuing legal education program, **"Antitrust and Health Care Medicine in the Marketplace"** presented in May, were **Drs. Monte Du Val, Donald P. Schaller**, and **Neal O. Ward,** Phoenix.

The Arizona Medical Association welcomes the following new members.

Active Members

Coconino
Mark C. Foster, M.D.
Internal Medicine
1360 North Rim Drive, Flagstaff
University of Arizona - 1978

Maricopa
Robert S. Eliot, M.D.
Cardiovascular Diseases
1800 East Van Buren, Phoenix
University of Colorado - 1955
Marcus Richard Engelman
Emergency Medicine
350 West Thomas Road, Phoenix
Ohio University College of
Medicine - 1973
Stanley Goldberg, M.D.
General Surgery
13460 North Ninth Drive, No. L, Peoria
Jefferson Medical College - 1972
David R. Johnson, M.D.
Ophthalmology
555 West Catalina, Phoenix
University of Arizona - 1977
Helen E. Johnston, M.D.
Pathology
9618 Hidden Valley Circle North, Sun City
University of Saskatchewan and
University of Toronto - 1946
John D. Mauk, M.D.
Family Practice
7800 North 59th Avenue, No. 1, Glendale
University of Kansas - 1974
William Clinton McCabe, M.D.
Family Practice
5422 West Thunderbird Road, Glendale
Creighton University - 1962
Mary J. McGee, M.D.
Pediatrics
5310 West Thunderbird Road, Glendale
University of Arizona - 1973
Cheryl J. Pagel, M.D.
Family Practice
P. O. Box 489, Grand Canyon
University of Arizona - 1977
Scott R. Petersen, M.D
General Surgery
9225 North Third Street, No. 300, Phoenix
University of Utah - 1974

Pima
Anna Marie Hawkins, M.D.
Internal Medicine
630 North Alvernon, Tucson
University of Arizona - 1978

Santa Cruz
Mary Anne McAfee, M.D.
General Surgery
1230 Target Range Road, Nogales
Texas Tech University School of
Medicine - 1976

Service Members
Maricopa
Rice Cowan Leach, M.D.
General Preventive Medicine
4212 North 16th Street, Phoenix
University of Kentucky - 1966

Pima
Gabriel Otto Manasse, M.D.
Psychiatry
Veterans Administration
Medical Center, Tucson
Temple University, Philadelphia - 1969

Associate Members
Maricopa
Walter Berberich, M.D.
Internal Medicine
4002 East San Juan, Phoenix
Georgetown University
School of Medicine

Pima
Stanley I. Glickman, M.D.
Urology
6761 North Montezuma, Tucson
Columbia University College of
Physician/Surgeons - 1941
Howard M. Klopf, M.D.
Family Practice
569 West Vista Hermosa Drive,
Green Valley
Medical College of Wisconsin - 1939
Resident Members
Pima
Jeffery James Fahs, M.D.
Neurology - University of
Arizona 1978

Student Members
Pima
Stephen L. Huhn
University of Arizona

Affiliate Members
Maricopa
Randy D. Danielsen, P.A.
Family Practice
4425 West Olive, Phoenix
University of Utah
Ronald Lee Fergison, P.A.
Family Practice
213 Monroe Avenue, Buckeye
St. Louis University
Carl Victor Hilton, P.A.
Occupational Medicine
111 South 34th Street, Phoenix
University of Nebraska
John James Hoffman, P.A.
Family Practice
1809 East University Drive, Mesa
University of Nebraska

Gary Lee Morris, P.A.
Emergency Medicine
222 West Thomas Road, No. 210, Phoeni
Joe L. Rogers, P.A.
Family Practice
2525 West Greenway, Phoenix
Wichita State University

Mohave
Larry J. Keating, P.A.
Family Practice
1222 East Hancock Road, Riviera
University of Oklahoma

Pima
Lou Leo Lafond, P.A.
General Practice
10000 South Wilmot Road, Tucson
University of Nebraska College
of Medicine

Yavapai
Roger L. Quinte, P.A.
Family Practice
P. O. Box 948, Bagdad
Howard University

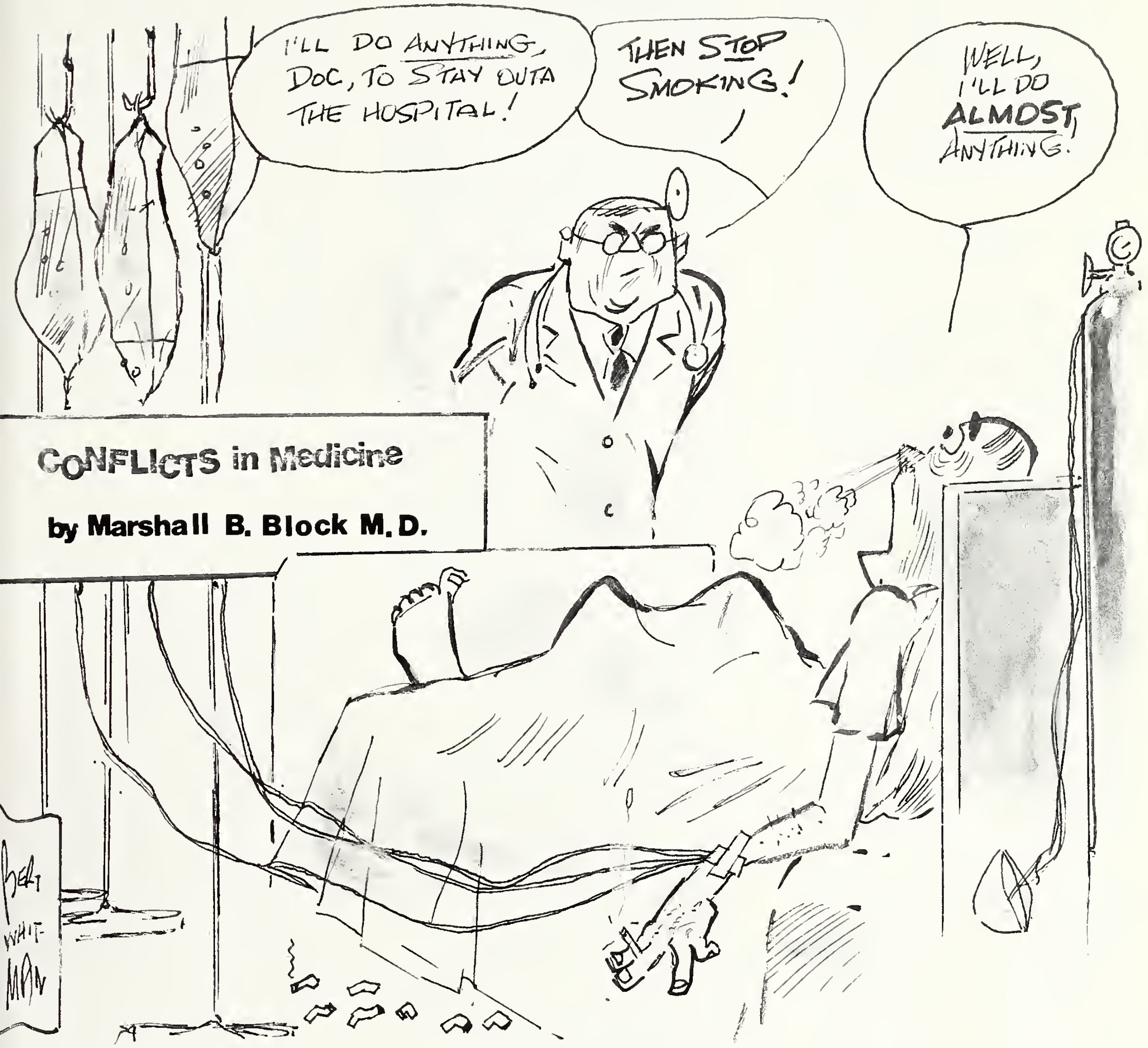
Robert O. Wilson, M.D., Youngtown, with participants at ArMA's Tenth Annual Sports Medicine Symposium.

Robert E. T. Stark, M.D., Phoenix, demonstrates the use o 'heavy hands' in a weight loss program during ArMA's Sport Medicine Symposium.

Bryan Updegraff, M.D., discusses allergies at ArMA's April HEALTH TALK.

CONFLICTS in Medicine

by Marshall B. Block M.D.


I'LL DO ANYTHING, DOC, TO STAY OUTA THE HOSPITAL!
THEN STOP SMOKING!
WELL, I'LL DO ALMOST ANYTHING.
WHIT-MAN

Library Talk

Symposium Volumes:

Are ALL Published Proceedings Really Necessary?

Bertha R. Almagro

Rarely have lasting value; even to specialists—built-in obsolescence—snapshots of the current status of the field, consequently go out of date rapidly—compendia of data the authors had been unable to publish elsewhere—hastily written reviews of previously reported material—repetitive—superseded—editors seldom possess the courage to mold their material into a coherent whole—uneven style and organization—little or no editing reflected by poor language—more vigorous editing and peer review—some excellent papers, several good ones, a few mediocres, far too many poor ones—most of the presented papers either have been or will be published elsewhere, often in indecently scanty disguise—symposium papers are often unrefereed preliminary reports—abysmal books and symposium volumes bring no credit to any field—rarely intended for a general audience.

These unflattering comments have been extracted from numerous book reviews, reflecting a widespread feeling toward the torrential publication of volumes containing the proceedings of countless annually held symposia. Considering that these critical remarks have been expressed by their own peers, several questions come to mind.

Is it necessary for the words spoken at those events to find a printed outlet, thus adding fuel to the current information explosion? Are symposia held with the sole purpose of producing a volume of printed paper? Is the symposia considered a failure if no visible evidence is produced?

I have been able to monitor closely the increasing rate of published proceedings coming from the presses of prestigious publishers such as Academic Press, Elsevier, Plenum, Raven, Liss, and others, and assess the adverse impact they have on the Library budget.

The average price for the proceedings volumes is very high (see appendix), therefore libraries become a perfect target for their sales. The proverbial zeal of librarians to serve their constituency and collect the printed word is well known to publishers, and it provides a wonderful way to insure sales.

Besides the fact that by nature they are rarely intended for general audiences, but mostly directed to the authors' peers, another negative aspect of published symposium volumes is based on dual publication policies. That is, quite often they are also published as special journal issues. To the dismay of Acquisition Librarians this information becomes available only after the volume has been processed and then it is too late to return it to the publisher. If to the sales price are added costs for acquisition, processing, and shelving, the final price tag is far too high due to built-in limitations and the narrow audience they reach. One more important point is provided by infrequent use. A surveillance of its circulating patterns at the Arizona Health Sciences Center Library revealed that few, if any, circulated at all, thus creating a wasteland of overpriced volumes languishing unused on the shelves.

I am not suggesting that this type of publication is not valuable; I am simply questioning the necessity of having so many published (notice the word ALL in the title). The sheer force of their numbers represents a threat to the library's acquisition budget, while rapidly using up the already limited available shelving space.

Requests for this type of material can be easily accommodated through interlibrary loan, thus satisfying the needs of the users. The Library is free then to pursue a selective acquisition policy, by which only symposium volumes on subjects of relevance to the needs of the institution and its users are added to the collection. This selection is based on the quality of the papers as indicated by peers through published reviews and as a result of direct requests, and recommendations from Arizona Health Sciences Center faculty and staff members. This practice guarantees that the volumes added represent an admirable effort to assemble the contributions of a group of distinguished specialists, with informative papers presented in a clear, concise, and comprehensive manner. A true opposite of the dismal picture projected by the comments cited at t beginning of this article.

Is there any way to stop the overflo of published proceedings? If the level of production continue at the present pace we might have to follow the advice given by one book reviewer ar form an organization called SWOP—Speakers Who Oppose Publication. Arthur Koestler's witty book "The Cal Girls"[1] may also shed some light on t dilemma.

To present a balanced view of the controversial issue "to publish or not publish," I want to quote two famous writers. Cicero (106-43 B.C.) had this t say: "For a man to commit his though to writing when he can neither arrang them nor bring any new light to bear-up on them, and indeed, when he ha no attraction whatsoever to offer to h readers, is a senseless waste of time, and of paper too." On the opposite side of the coin, Pliny the Elder (23-79 A.D.) had this to say: "No book was s bad, but some good might be got out of it." *Chacun a son gout!*

Appendix

Second World Congress on Cardiac Rehabilitation Jerusalem, November/December 1981. Editor: Kellermann, J.J. (Tel Hashomer), 1982. $72.

First Congress of the Asian Otorhinolaryngological Federation, Pattaya December 1981. Editors: Prasansuk, S.; Srisomboon, P.; 1983. $98.25

Symposium on Recent Advances in Otological Research in honour of Harold F Schuknecht, Boston, Mass., June 1982. Editors: Colman, B.H. (Oxford); Pfaltz, C.R (Basel), 1983. $118.75

Proceedings of an International Symposiu Tokyo, November 1981. Editors: Abe, T.; Yamanaka, M. (Tokyo) 1983. $118.00

International Congress of Pediatric Cardiology and Cardiac Surgery, Vicenza, September 1981. Editors: Belloli, G.P. (Vicenza); Squarcia, U. (Parma), 1983. $99.0

Proceedings of the IBRO Satellite Symposium on Drugs and Hormones in Brain Development. Zurich, April 1982. Editors: Schlumpf, Margret, Lichensteiger, W. (Zurich), 1983. $99.00

Proceedings of the 9th International Pigme Cell Conference, Houston, Texas, January 1975, Part I. Editor: Riley V., 1976. $91.75

U.S.-Italy Symposium on Nutrition and Cardiovascular Disease, Rome, December 1980. Editor: Hegyeli, Ruth J., 1983. $138.50

Proceedings of the Symposium on the Syri Hamster in Toxicology and Carcinogenesis Research, Boston, November 1977. Editor: Homburger, F., 1979. $97.75

*All volumes are Karger publications.

Reference

1. Koestler A: The call girls; a tragi-comed New York, Random House, 1973.

From: Assistant Librarian for Processing Services, University of Arizona Health Sciences Library, Tucson, Arizona 85724.

ArMA Reports

e minutes in this section have been ndensed. A complete copy will be sent any member requesting them.

BOARD OF DIRECTORS

A meeting of the Board of Directors the Arizona Medical Association, Inc. s held on Friday, April 27, 1984, in e Acoma Room of the Scottsdale onference Center and Resort Hotel, ottsdale, Arizona, a quorum being esent, convened at 8:12 a.m., Neopito Robles, M.D., President and hairman, presiding.

Prior to beginning the agenda for the y's meeting, Dr. Robles introduced e guests who were present and took few minutes to express his thanks and preciation to all members of the ard of Directors for their support and sistance since he took office in 1983.

The Annual Report of the ArMA uxiliary was received for information the Board and it was determined at the Auxiliary should be thanked d commended for their outstanding forts on behalf of the medical ofession.

Dr. Neubauer updated the Board as membership as well as total dollars ailable for candidate support, once ain reiterating the improved impact at medicine has had in the legislature is year over years past but the treme importance of continuing to licit new members.

Dr. Kettel reported to the Board on e pieces of legislation in which the ollege had been deeply involved this ear and which had passed and were ue to be signed by the Governor, as ell as commented on the Cancer enter and the upcoming graduation heduled for May 11.

The Board received and reviewed the arch 30th correspondence from illiam E. Crisp, M.D., relative to ssociation support of the Arizona ancer Center and use of funds for search projects and; it was moved nd carried that, should a cigarette tax ll be passed by the legislature, the rizona Medical Association support e use of funds derived therefrom for ealth research throughout the state.

Mr. Robinson briefly reported on his tendance at the April 12th Board eeting of the Arizona Hospital ssociation, stating that, while other ems occupied a portion of the iscussions, the meeting was mainly evoted to the Coalition, the initiative nd possible legislative solutions.

At this point, Mr. Krause and Mr. Stanton updated the members on where things were on this subject at the legislative level and of the Coalition's latest indication that it would proceed with the initiative.

Dr. Baker then set forth for the Board his thoughts as to what the Association's position re: the initiative or potential legislation should be, as well as some of the temporary solutions to lessening the rise in health care costs. Following a general discussion of the entire issue, it was moved and unanimously carried that the Board of Directors support the statement presented by Dr. Baker which states as follows:

"As your president, I would like to inform you that the Board of Directors of the Arizona Medical Association today, by unanimous vote, has stated:

1. All Arizona physicians are in full agreement as to the presence of a serious medical cost containment problem.
2. CON is due to expire in August '84 with resultant vacuum and possible ingress into Arizona of purveyr's of poor patient care.
3. This problem should not be solved by an initiative process which would now include a constitutional amendment, severely regulatory and frozen in its usage for up to 10 years.
4. We will individually accept a statewide freeze on our patient charges by resolution during this meeting.

Therefore, on behalf of our patients, the residents of Arizona, we request:

1. A two-year interim *strict* legislation which will freeze hospital charges.
2. Establishment of an impartial study commission with equal hospital-coalition representation, together with representatives of the patient-physician community, chaired by Dean Louis Kettel of our College of Medicine, to immediately begin to accumulate data, such as the effect of the New Jersey all-payor DRGs and effect of Arizona Medicare DRGs, etc. Its conclusion to be presented to the Arizona Legislature in two years' time. This commission to be funded via the legislative process.

3. Any further legislation, passed in association with the above, be flexible enough to allow necessary amendment at the end of two years' time."

The Board received March 30th correspondence from Perry Stearns, Secretary of Gila County Medical Society, regarding deunified membership.

It was moved and carried to approve the following as the 1984-85 meeting schedule for the Board of Directors:

August 11, 1984 - Saturday - 10:00 a.m. - Phoenix
November 3, 1984 - Saturday - 10:00 a.m. - Tucson
January 26, 1985 - Saturday - 10:00 a.m. - Phoenix
March 23, 1985 - Saturday - 10:00 a.m. - Phoenix
April 26, 1985 - Friday - 8:00 a.m. - Scottsdale
April 27, 1985 - Saturday - 12:00 Noon - Scottsdale

The Board received a letter and resolution of Ohio State Medical Association relating to its decision not to bid for its state PRO contract.

It was moved and carried to ratify and approve the minutes of the Executive Committee meetings held on March 23, 1984 and April 12, 1984.

Financial Statement for period ending 2/29/84 was received by the Board.

Allan Stanton presented for the Board an update of the major issues which were considered by the legislation this session which directly impacted on medicine and in which the Association and its members had been extremely active and involved, expressing his appreciation to those physicians who had devoted more than the normal amount of time and effort.

The Board received 4/18/84 correspondence from Senator Juanita Harelson regarding HB 2457.

Dr. Ward, chairman of the Ad Hoc Membership Committee, reported on that committee's activities to personally contact those physicians who had chosen not to pay dues during 1984 in an attempt to bring them back into the membership, requesting again the assistance of any and all Board members in this ongoing process.

The Board was apprised that there would be additional resolutions, received subsequent to the second House of Delegates' mailing, which would be at their places in the House of Delegates' meeting room.

Dr. Robles spoke briefly about his recent Washington visitation regarding the bill which would require mandatory acceptance of Medicare assignment, with Bill Roberts commenting on its ultimate defeat. Mr. Roberts, Field Representative of the Division of Medical Society Relations of the American Medical Association, had planned to speak on national legislative/AMA activities; however, due to lack of time, offered his availability to members of the Board for discussions when and if convenient either Friday or Saturday.

Brief comment was received from Dr. Baker on his attendance at a recent meeting on the Health Policy Agenda for the American People.

EXECUTIVE COMMITTEE

A meeting of the Executive Committee of the Arizona Medical Association, Inc. was held on Friday, April 27, 1984, in the Sunset Room of the Scottsdale Conference Center and Resort Hotel, Scottsdale, Arizona, convened at 6:10 a.m., Neopito Robles, M.D., President and Chairman, presiding.

The committee received and discussed the Board directive of March 27th requesting the Executive Committee to review and make recommendation upon the current procedure set forth in the bylaws for submission of annual reports of officers, Board members, etc. The committee determined that the Articles of Incorporation and Bylaws Committee were more informed about the Bylaws requirements and the intent of same and; it was moved and carried that the March 27th letter from the Board of Directors be forwarded to the Articles of Incorporation and Bylaws committee requesting that it review the Bylaws requirements relating to submission of annual reports through the Board to the House of Delegates, outline for this committee what it believes the intent of such provisions to be, and make recommendations, if any regarding appropriate changes in those provisions.

It was moved and carried to approve the following as the 1984-85 Meeting schedule of the Executive Committee:

July 20, 1984 - Friday - 6:30 p.m. - Phoenix
August 10, 1984 - Friday - 6:30 p.m. - Phoenix
September 21, 1984 - Friday - 6:30 p.m. - Phoenix
October 19, 1984 - Friday - 6:30 p.m. - Phoenix
November 3, 1984 - Saturday - 8:00 a.m. - Tucson
December 14, 1984 - Friday - 6:30 p.m. - Phoenix
January 25, 1985 - Friday - 6:30 p.m. - Phoenix
February 22, 1985 - Friday - 6:30 p.m. - Phoenix
March 22, 1985 - Friday - 6:30 p.m. - Phoenix
April 26, 1985 - Friday - 7:00 a.m. - Scottsdale

The 4/27/84 Board of Directors' agenda was reviewed and additions made thereto.

Dr. Robles introduced Mr. William F. Roberts, Field Represenlive for the AMA Division of Medical Society Relations, who would be attending all sessions of the annual meeting and be available to talk with officers and members of the Board on a one-on-one basis. Dr. Robles also reported on his recent trip to Washington to meet with Congressional leaders on the Rostenkowski amendment.

The committee discussed at great length the recent activities relative to "Baby Doe" legislation, as well as ongoing attempts to reach a legislative solution to the rise in health care costs to avoid the initiative going in the November ballot.

The committee received for information the curriculum vitae of Richard Ilka, M.D., currently the Corporate Director of Employee Health Programs for Samaritan Health Service, who is a possible candidate for the position of Director of the Department of Health Services.

Dr. Robles extended to the officers and ArMA staff his sincere appreciation and thanks for their support and assistance during his year in the presidency.

ANNUAL MEETING HOSPITAL MEDICAL STAFF SECTION

The annual meeting of the Hospital Medical Staff Section of the Arizona Medical Association, Inc., was held Thursday, April 26, 1984, in the Mescalero Room of the Scottsdale Conference Center and Resort Hotel, Scottsdale, Arizona.

The program, to which various guests were invited, i.e., members of ArMA's Board of Directors, committee members, members of the legislature, was also attended by many of the representatives to the HMSS Section.

Jody Miller, Vice President of Claims and Federal Programs at Blue Cross and Blue Shield of Arizona, presented the positive aspects of DRGs, with Dr. Richard A. Manch, Chairman of Medical Records at Good Samaritan Medical Center, presenting their negative aspects and how to live with them. These talks generated an exceptional amount of interest among the audience, following which, Dr. Ward indicated to the Section representatives that the Governing Council had, in meeting earlier in the day, determined to submit two additional resolutions, relating to DRGs, to the ArMA House of Delegates on April 27th.

Dr. Dennis C. Westin, a practicing psychiatrist and member of the Governing Council, addressed the group on regulations which would go into effect as a result of the Medical Practice Act. Dr. Westin recommended that all physicians be aware of the possible impact on *all hospitals* and not just psychiatric institutions.

The last speaker of the morning was Mr. Mel E. Cunningham, Chairman-Elect of the Arizona Hospital Association and Vice President/CEO of Maryvale Samaritan Hospital in Phoenix, who discussed at great length the efforts of the Coalition to bring about the placement of a constitutional amendment for health care cost containment on the November ballot, the Hospital Association's efforts to deter this activity, and the problems which would confront Arizona if, in fact, the initiative passed. Mr. Cunningham also spoke on the need create better relations between medic staffs and governing boards within eac hospital in the state.

Following the program, Dr. Ward encouraged the representatives to onc again seek permanent slots at medical staff meetings for reporting back on Council and Section activities, encouraged participation at the American Medical Association Hospita Medical Staff Section meeting in June and called for an indication of interes in a September or October meeting o the Section, which was given.

HOSPITAL MEDICAL STAFF SECTIO

A meeting of the Governing Counc of the Hospital Medical Staff Section the Arizona Medical Association, Inc., was held on Thursday, April 26, 1984, the Mescalero Room of the Scottsdale Conference Center and Resort Hotel, Scottsdale, Arizona.

Dr. Ward updated the members on the status of the conflict of Dr. Andre Slaski with the hospital administration at the Sierra Vista Community Hospita indicating that apparently that issue h been resolved; and reported on his invitation to attend a recent meeting i Sierra Vista.

It was reported to the Council that the Board of Directors, in meeting on March 27th, had approved the Council's recommendation that ArMA encourage hospital medical staffs to include line or floor nurses (nonadministrative) on committees of the medical staffs which deal with patient care for the sole purpose of improving or enhancing the quality of that care and input was requested fro the members as to how best to proceed. Following a discussion, wherein it was the consensus of the members that this policy could certain only be a "recommendation" and not "directive" to hospital medical staffs, i was determined to inform medical sta by again circulating the minutes to the medical staff secretaries for review during the next scheduled staff meeting.

The resolution submitted by the Governing Council (Nos. 1-84, 2-84 an 3-84) to the ArMA House of Delegates which would be before the House on Friday, April 27th, were received and reviewed by the committee, it being suggested that one or more of the Council members be present at the reference committee meeting to speak to the issues involved.

The meeting scheduled for May 19th with the ArHA Liaison committee was discussed, with Dr. Uhrich's recent

er, setting forth five suggested
ics, being reviewed. It was the
ling of the Council that the five
ns could require lengthy, involved
cussions and that the meeting
ntent should be limited to (1) the
alition, (2) DRGs, and (3) medical
f membership.

Discussion was held regarding the
e 14-18 meeting of the American
dical Association HMSS in Chicago
l, believing it to be most important
t as many representatives as possible
end such meeting, it was determined
t, again by circulation of these
nutes, Arizona Hospital Medical
ffs be encouraged to send such
resentative and, if at all possible, to
st in defraying the expenses which
uld be incurred.

he program and business meeting of
Hospital Medical Staff Section
eduled to immediately follow the
eting of the Council was discussed,
l it was agreed that some of the
ns for the business portion be
cussion of any resolution which
ght be submitted or
ommendations for Council
pointments which might be made
ring the American Medical
ociation meeting and renewed
couragement for representatives to
k permanent time slots at their
dical staff meetings to discuss major
ms of interest considered by the
uncil and the Section.

Dr. Ward reviewed for the committee
ecent letter from Dr. Baker
uesting that the Council concern
lf with two major items—the broad
plication of DRGs and hospital staff
vileges for limited license
ctitioners. Following a discussion on
subject of DRGs, it was moved and
ried that the Governing Council
epare and submit two additional
olutions to the House of Delegates,
e regarding establishment of a "DRG
ta Bank" and one recommending
estigation of an All-Payor DRG
gram for Arizona.

The Council reviewed and discussed
correspondence from Dr. Larry
iffith and his concerns that a prior
olution of the Section encouraging
rticipation by physicians on hospital
ards of Trustees was not strong
ough.

The Council agreed that, while we
uld encourage and recommend this
licy to Boards of Trustees, we could
t, in fact, dictate such policy. Dr.
ard agreed to contact Dr. Griffith to
ffirm the importance of having
ysicians elected to governing boards
order to establish a closer working
ationship and the recommendation
the Hospital Medical Staff Section
at this be done wherever possible.

It was also agreed by the members
that perhaps the best way to accomplish such involvement was to contact trustees directly and discuss with them the needs of medical staffs.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

JUNE

Pediatrics in the Red Rocks
7th Annual Summer Pediatrics Conference
June 8-10, Poco Diablo Resort, Sedona, Arizona. Contact: Lolly Dwan, U. of A. College of Medicine, Tucson, (602) 626-6173. Good for Category 1 credit hours. Sponsored by The University of Arizona Health Sciences Center, Tucson, Arizona.

3rd Assembly Meeting of the AMA Hospital Medical Staff Section
June 14-18, Chicago, Illinois. Sponsored by Department of Hospital Medical Staff Services, American Medical Association. Contact: Hospital Medical Staff Services (312) 645-4747.

Medical Liability Case Presentation Conference
June 20, 12:00 noon, Support Services Auditorium, Boswell Memorial Hospital, Sun City, Arizona. Contact: Robert Briton, M.D. Sponsored by Mutual Insurance Company of Arizona. Approved for hour per hour Category 1 credit.

Pulmonary Disease
June 27, 12:00 noon, Support Services Auditorium, Boswell Memorial Hospital, Sun City, Arizona. Contact: Cash Beechler, M.D. Sponsored by Southwest Chest Consultants. Approved for hour per hour Category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008.
Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept, & Nov.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Famil Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 850

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Problem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

dicine Renal
l Tuesday, 12 Noon.

ergency Medicine
Tuesday, 12 Noon.

/GYN—Tri-Hospital Perinatal Mortality
Tuesday, 12 Noon.

/GYN—Departmental Grand Rounds
and 2nd Tuesday, 12 Noon.

N Endocrine Conference
Tuesday, 12 Noon.

esthesiology—General
ekly, Tuesday, 2:45 p.m..

view of GYN Pathology Slides
ekly, Tuesday, 4:00 p.m.

diatric Grand Rounds
d Tuesday, 7:30 a.m.

hology Staff Inservice
ekly, Wednesday, 6:45-7:50 a.m.

esthesiology Residents & CRNA's nference
ekly, Wednesday, 7:00 a.m.

/Neonatal Conference
ekly, Wednesday, 7:30 a.m.

rgery
ekly, Wednesday, 7:00 a.m.

rgery Hand Conference
ekly, Wednesday, 7:30 a.m.

ychiatry Staff
Wednesday, 11:00 a.m.

ychiatry General Conference
d, 3rd, & 4th Wednesdays, 12 Noon.

dicine Cardiology
Wednesday, 12 Noon.

dicine Hematology
d Wednesday, 12 Noon. Contact: Neil ernoff, M.D.

dicine Mortality
d Wednesday, 12 Noon.

dicine Infectious Disease or Hematology
h Wednesday, 12 Noon.

diatrics Renal/Endo Conference
t Wednesday, 12:30 p.m.

diatrics Infectious Disease
h Wednesday, 12:30 p.m.

esthesiology Staff Lecture
t, 2nd & 4th Wednesday, 2:30 p.m.

rgery Morbidity & Mortality Conference
t, 2nd & 4th Wednesday, 3:30 p.m..

es/Surgery Joint Traum Conference
d Wednesday, 3:30 p.m.

rgery Urology Staff
d Thursday, 7 :30 a.m.

esthesiology Journal Club
h Thursday, 8:00 a.m.

nbulatory Pediatrics
eekly, Thursday, 8:00 a.m.

urgery Burn Chart Rounds
t, 2nd, & 3rd Thursdays, 8:00 a.m.

urn Mortality Conference
h Thursday, 8:00 a.m.

edicine Problem Case Conference
st Thursday, 12 Noon.

edicine Rheumatology
nd Thursday, 12 Noon.

edicine Staff & House (Separate)
h Thursday, 12 Noon.

B/GYN Resident Conference
st, 2nd, & 3rd Thursday, 12 Noon.

ascular Surgery Conference
st, 2nd & 4th Thursday, 12:30 p.m.

ombined GI & Surgery Conference
rd Thursday, 12:30 p.m.

nesthesiology Chief Resident's Lecture
eekly, Thursdays, 2:45 p.m.

rthopedic Surgery Basic Sciences
eekly, Thursdays, 5:30 p.m.

B/Surgery Pathology
eekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon. **Surgery Tumor Board**
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12 :30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251.
Contact: Tom Disney, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.

Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am - 8:30 am, Phillips Auditorium

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.

Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.

Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.

Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.

Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.

Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.

Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.

Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.

Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.

Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference

3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.

Genetics Conference

Weekly, Monday, 12:30 p.m., Pediatric Department.

Pediatric Rounds

Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.

Pediatric Grand Rounds

4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.

ECG Conference

Weekly, Tuesday, 12:30 p.m., Pediatric Department.

Medical Grand Rounds

Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.

Visiting Professor Formal Presentation

Weekly, Thursday, 8:00 a.m., PIMC.

Visiting Professor Informal Presentation

Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.

Visiting Professor Formal Presentation

Weekly, Thursday, 12:30 p.m., PIMC.

Nephrology Conference

Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.

Current Concepts in Medicine

Weekly, Tuesday, 12 Noon, Auditorium

Surgery Department Conference

4th Monday, 12 Noon, Auditorium.

Hematology/Oncology Conference

Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.

Ophthalmology Case

2nd Tuesday, 7:30 a.m.

Ophthalmology Society

4th Tuesday, 6:00 p.m., Auditorium Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery

1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.

Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology

Weekly, Thursday.

Emergency Medicine Lectures

Weekly, Thursday, 8:00 a.m., Century Rm. A.

Cardiology Conference

Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference

1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.

Dermatology Conference

4th Monday, 5:00 p.m., Contact: R. Miller, M.D.

Endocrinology Conference

4th Monday, 12 Noon, Contact: M. Parker, M.D.

Nephrology Conference

2nd Monday, 12 Noon, Contact: Stephen Seltzer.

Psychiatry Department Meeting

3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.

Perinatal Conference

2nd Tuesday, 7:00 a.m.

Surgical Conference

2nd Tuesday, 7:15 a.m.

Hematology Conference

4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.

Pulmonary/Infectious Disease Conference

Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.

Orthopedic Conference

1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.

Pediatric Grand Rounds

1st & 3rd Tuesdays, 12:30 p.m., Contact: Dr. Lightner.

Neurophysiology Conference

2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.

Clinical Pathology Conference

Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.

Family Practice Meeting

2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference

Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference

Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference

Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.

Tumor Conference

Weekly, Thursday, 12 Noon, Contact: Cancer Committee.

GI Conference

Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference

Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.

OB/GYN Conference

1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.

OB/GYN Pathology Conference

3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Urology Conferences

Weekly Tuesdays, Room 2413 - Uropathology

Weekly Tuesdays, Room D-335 - Consultation

Weekly Fridays, Room 3134 - Uroradiology

These activities are a part of the CME program at the Veteran's Administration Medical Center

Medical/Surgical GI Conference

1st & 3rd Mondays, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Cancer Symposium

2nd Monday, 3:00-4:00 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.

Orthopedic Surgery Conference

2nd Monday, 7:30 a.m., Rm 3134, Contact Dr. Russo.

Surgery - Pathology Conference

4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.

GI Grand Rounds

Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.

GI Radiology Clinical Correlation Conference

1st and 3rd Tuesdays, 12:00 noon, Rm. T- Contact: Dr. Sanowski.

GI Pathology Conference

2nd and 4th Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

Urology Histopathology Conference

Weekly Tuesdays, 8:00-9:00 a.m., Rm 241 Contact: Drs. Haddad & Kivirand, Ext. 417

Pulmonary X-ray Correlation Conference

Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.

Cardiology Conference

2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.

Medical/Surgical Chest Conference

1st & 3rd Thursdays, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.

Medical Service Grand Rounds

1st, 2nd, 3rd. & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.

Medical Mortality Conference

4th Friday, 11:00 a.m., Room T-5, Contact: Dr. Zeller.

Urology Conference

Weekly Friday. 12:00-1:00 p.m., Room 313 Contact: Dr. Haddad, Ext 418.

Vascular Conference

2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITA MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds

1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds

4th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITA & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved f Category 1 credit.

Medical/Surgical Chest Conference

Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.

Medical Grand Rounds

Weekly, Wed., 12:00-1:00 p.m., VA Hospita

f Conf. Rm. & (AHSC), Contact:
Smith, M.D.
gical Grand Rounds
ekly, Wed., 4:00 p.m., Contact:
Putnam.
locrinology Seminar
3rd, & 5th Thursday, 12:00-1:00 p.m.,
. N318, Contact: Dept. of Internal
dicine.
nd Rounds
ekly, Thursday, 11:00 a.m., Bldg. 107,
ntact: J. Fitzharris, D.O.
scular Radiology, Interesting Case Conf.
ekly, Thursday, 12:00 noon.
urology Grand Rounds
ekly, Friday, 12:00 p.m., Contact:
Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

0 Avenue A., Yuma Az 85364. Contact:
n Winfield, M.D. Approved for Category
redit.
diology Conference
Tuesday, 7:00 a.m.
eration Outreach
d Tuesday, 6:30 p.m.
thology Conference
Tuesday, 7:00 a.m.
eration Outreach
d Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

onsor: U of A College of Medicine,
cson, AZ 85724. Robert M. Anderson,
D., Dir. of CME. Contact: See below.
proved for Category 1 credit.
esthesiology Board Review Conference
d & 4th Monday, 4:00-5:00 p.m., AHSC
ning Rm. C&D, Contacts: Dr. Vaughn &
yc.
esthesiology Basic/Clinical Sciences
ctures
eekly, Thursday, 4:00-5:00 p.m., Room
03.
esthesiology Case Discussion
eekly, Wednesday, 7:00 a.m., AHSC,
ning Rm. C&D.
esthesiology Resident Presentation
t Monday, 4:00-5:00 p.m., AHSC Dining
oom, C&D, Contacts: Drs. Otto &
ehngut.
ancer Center Tumor Board Seminar
d Tuesday, Monthly, 12:00-1:00 p.m.,
SC Auditorium, Contact: Cancer Center.
ardiac Catheterization Conference
eekly, Friday, 4:30 p.m., Contact:
r. Ewy.
ardiology Non-invasive Conference
eekly, Friday, 3:30 p.m., Contact: Dr.
wy.
ucson Cardiac Society
st Thursday, 6:30 p.m., Arizona Inn,
ontact: Karen Garcia.
linical Immunology, Allergy &
heumatology Rounds
very Friday, Noon-1:00 p.m. Contact:
ohn Boyer, M.D., Dept. of Internal
ledicine.
erebrovascular Disease Conference
londays, 5:00-6:00 p.m., Weekly, Rm.
505., Contact: Jerry Goldstone, M.D.,
ept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact:
Dr. R. Friedman.
Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact:
Dr. Lynch.
Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact:
Dr. S. Coulthard
Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m.,
Contact: Dr. Johnson.
Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact:
Dr. Sanders.
GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact:
S. Paplanus.
GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC,
Contact: Dr. T. Hunter.
Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact:
Dr. Murrell.
Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm.
6505. Contact: S. Salmon, M.D., Dept. of
Internal Medicine.
Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m.,
AHSC, Contact: Dr. J. Smith.
Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts:
Drs. Hughes & Alcorn.
Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact:
Dr. Stern.
Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC,
Dr. P. Johnson.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact:
Dr. P. C. Christenson.
Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m.,
Contact: Dr. Stern.
Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m.,
AHSC, Contact: Dr. C. Bamford.
Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC
Radiology Conference Rm.
OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact:
Dr. C. D. Christian.
Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact:
Dr. J. Herschler.
Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact:
Dr. H. Cross.
Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.
Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining
Rm. C&D, Contact: Drs. Hameroff & Cork.
Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact:
Dr. C. D. Christian.
Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC,
Rm. 5120. Contact: Dr. P. Finley.
Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact:
Dr. A. R. Graham.
Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC,
Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact:
Dr. Lillian Valdes-Cruz.
Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact:
Dr. Otakar Koldovsky.
Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact:
Dr. Marilyn Heines & Jane Ruggill.
Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC,
Rm. 8403, 5th Floor Auditorium.
Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan
Levenson, Palo Verde Hospital.
Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact:
Dr. Benjamin Burrows.
Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm.
1535F, UAHSC. Contact: Irwin M.
Freundlich, M.D., Dept. of Radiology.
Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC,
Contact: Dr. Christenson.
Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC,
Rm. 0655.
Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC,
Contact: Dr. Freundlich.
Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC,
Library Rm.1535C.
Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m.,
Contact: Dr. Nagle.
Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon,
AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag.
Radiology Conf. Rm.
Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC,
Contact: Dr. Wangensteen.
Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact:
Dr. Wangensteen.
Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 5505.
Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact:
Dr. Keith Likes.
Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC,
Contact: Dr. I. Freundlich.
General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon,
AHSC & VA Hospital Contact: Dr. G.W.
Drach.
Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC,
Contact: Dr. J. Goldstone.

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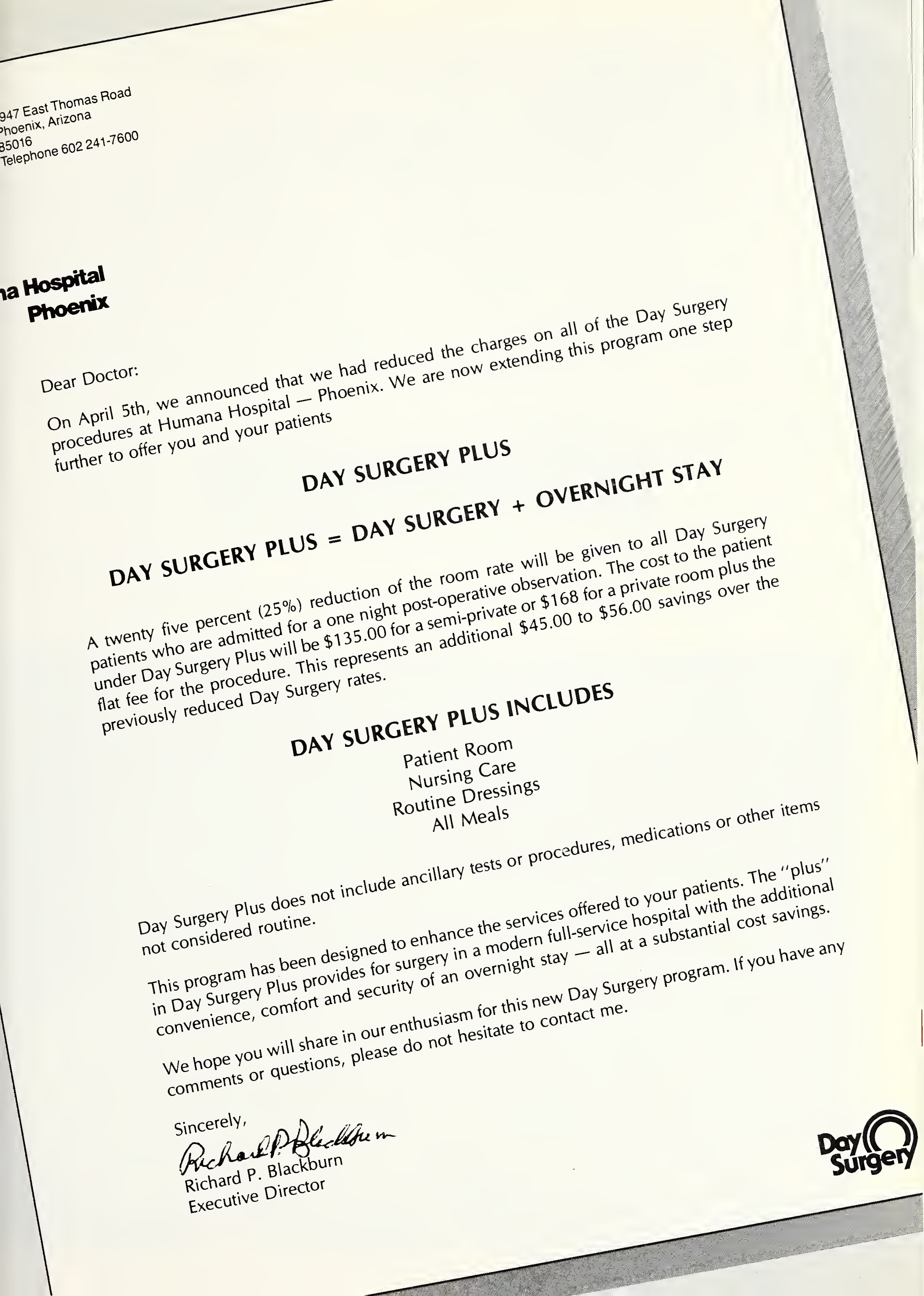

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Richard P. Blackburn
Executive Director

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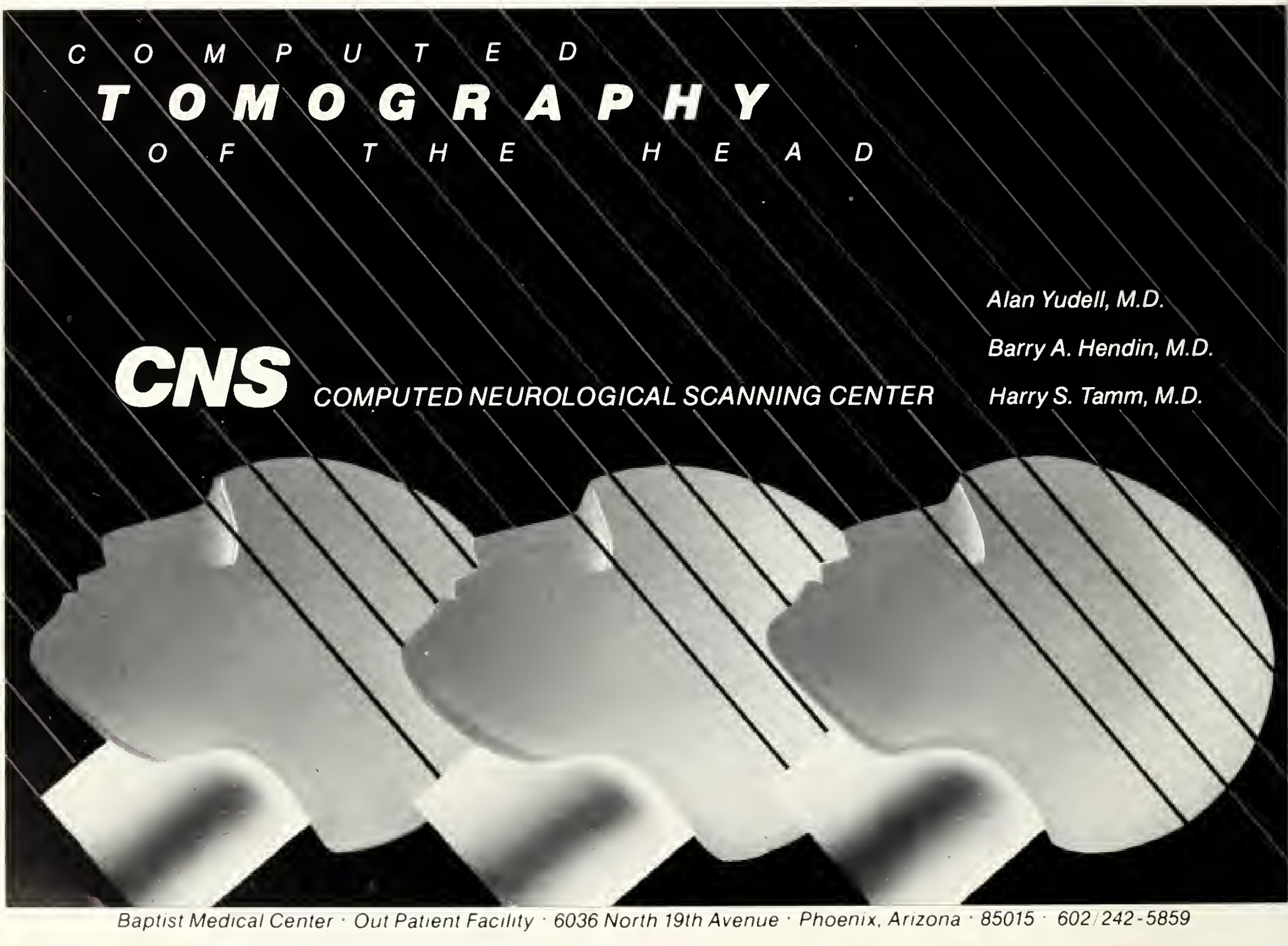

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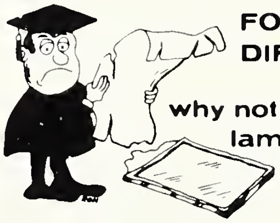

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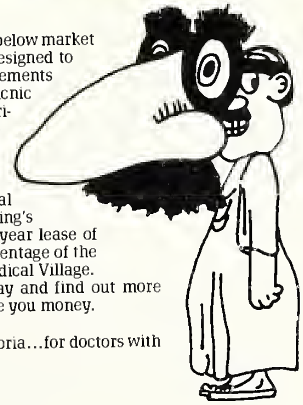

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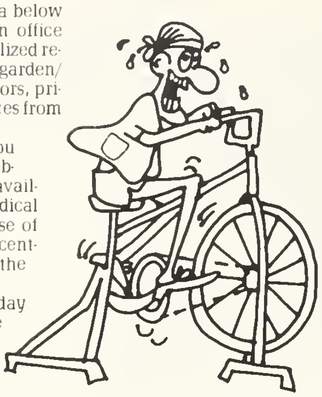

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1. Stone PH Turi ZG Muller JE Efficacy of nifedipine therapy for refractory angina pectoris *Am Heart J* 104 672 681 September 1982
2. Antman E Muller J Goldberg S, et al Nifedipine therapy for coronary-artery spasm Experience in 127 patients *N Engl J Med* 302 1269-1273 June 5 1980

BRIEF SUMMARY

PROCARDIA (nifedipine) **CAPSULES** For Oral Use

INDICATIONS AND USAGE I Vasospastic Angina: PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria 1) classical pattern of angina at rest accompanied by ST segment elevation 2) angina or coronary artery spasm provoked by ergonovine or 3) angiographically demonstrated coronary artery spasm In those patients who have had angiography the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina provided that the above criteria are satisfied PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed e g where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and or adequate doses of beta blockers

II Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and or organic nitrates or who cannot tolerate those agents

In chronic stable angina (effort associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina but available information is not sufficient to predict with confidence the effects of concurrent treatment especially in patients with compromised left ventricular function or cardiac conduction abnormalities When introducing such concomitant therapy care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS Known hypersensitivity reaction to PROCARDIA

WARNINGS: **Excessive Hypotension** Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated occasional patients have had excessive and poorly tolerated hypotension These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers

Severe hypotension and or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker but the possibility that it may occur with PROCARDIA alone with low doses of fentanyl in other surgical procedures or with other narcotic analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated the physician should be aware of these potential problems and if the patient s condition permits sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery

Increased Angina. Occasional patients have developed well documented increased frequency duration or severity of angina on starting PROCARDIA or at the time of dosage increases The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate or from increased demand resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina probably related to increased sensitivity to catecholamines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is important to taper beta blockers if possible rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure. Rarely patients usually receiving a beta blocker have developed heart failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS General: **Hypotension** Because PROCARDIA decreases peripheral vascular resistance careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested Close observation is especially recommended for patients already taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema Mild to moderate peripheral edema typically associated with arterial vasodilation and not due to left ventricular dysfunction occurs in about one in ten patients treated with PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuretic therapy With patients whose angina is complicated by congestive heart failure care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers The average increase was 45% Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured digitalis toxicity was not observed Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating adjusting and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis mutagenesis impairment of fertility When given to rats prior to mating nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity in rats embryotoxicity in rats mice and rabbits, and abnormalities in monkeys

ADVERSE REACTIONS. The most common adverse events include dizziness or light-headedness peripheral edema nausea weakness, headache and flushing each occurring in about 10% of patients transient hypotension in about 5% palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication Additionally the following have been reported muscle cramps, nervousness, dyspnea, nasal and chest congestion diarrhea constipation, inflammation, joint stiffness, shakiness, sleep disturbances blurred vision difficulties in balance dermatitis, pruritus, urticaria, fever sweating chills and sexual difficulties Very rarely introduction of PROCARDIA therapy was associated with an increase in anginal pain possibly due to associated hypotension

In addition more serious adverse events were observed not readily distinguishable from the natural history of the disease in these patients It remains possible however that some or many of these events were drug related Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare mild to moderate transient elevations of enzymes such as alkaline phosphatase CPK LDH SGOT and SGPT have been noted and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy is uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis possibly due to PROCARDIA therapy has been reported twice in the extensive world literature

HOW SUPPLIED Each orange soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66) 300 (NDC 0069-2600-72) and unit dose (10x10) (NDC 0069 2600-41) The capsules should be protected from light and moisture and stored at controlled room temperature 59 to 77 F (15 to 25 C) in the manufacturer s original container

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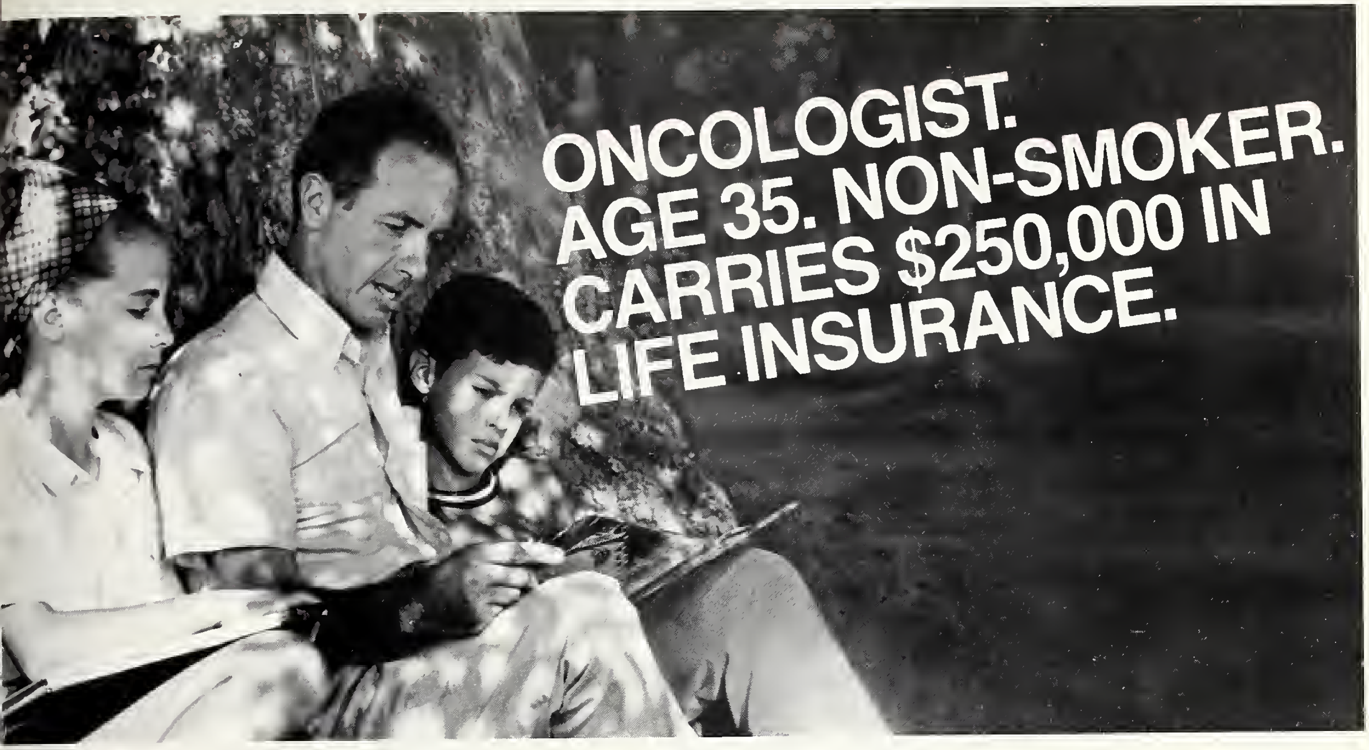
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HCCCS—A Mid-Life Crisis:

hanges Made and Lessons Learned

ndrew W. Nichols, M.D., M.P.H.

bstract

This paper reviews some of the problems of AHCCCS the mid-point of its planned three year life span. easons for the problems have been suggested and ianges made in the current session of the Arizona egislature noted. Program successes, particularly in the tient care area, are documented and problems sociated with meaningful system evaluation are scussed. Finally, the article outlines ten lessons learned us far in the AHCCCS experiment. AHCCCS is going rough its mid-life crisis. This should not blind us to its complishments.

ey Words: Arizona; Health Care; Cost Containment; HCCCS; Evaluation; Legislature; Medicaid.

oblems With the Program

“Little information was available for advance lministrative planning for a program so unprece- ented . . . Dozens of press reports called attention to rious shortcomings of the program, including many urces of irritation, confusion and delay.”[1]

Written in 1968 after two years of experience with edicaid, these words were revived in 1984 and cluded in the first annual report of the Arizona Health are Cost Containment System. In the eyes of many ealth care providers and much of the general public, HCCCS has been replete with “irritation, confusion d delay.” Dozens — if not hundreds — of press reports ave stressed program shortcomings.

Recent headlines such as: “Cover Up of AHCCCS oes Alleged,” “ACCESS Runs $40 Million Over dget,” “Babbitt Urges Harsh Measures to Balance HCCCS Budget,” “AHCCCS Costs Outpace edicaid's by 29%,” and “Ousted AHCCCS Managers ing State,” demonstrate the serious crisis in which HCCCS was perceived to be after approximately one d one half years of its projected three year life span.[2]

ational media reports were equally unfavorable, hough somewhat more muted.

The program has taken its toll in other ways. To date, AHCCCS has gone through two directors of the Arizona Department of Health Services (ADHS), two directors of the AHCCCS division of ADHS, and, with the termination of McAuto Systems Group, Inc., (MSGI) as AHCCCS administrator, three Project Directors for the administrator. In addition, political careers have gone on the line, first through alleged improprieties, then through assertions of mismanagement.

The degree of severity of the political situation is illustrated by a recent editorial from *The Arizona Republic*: “AHCCCS is in shambles, facing a deficit of as much as $65 million by June 30 for what can only be termed inept management and frightful neglect from top to bottom. As for Babbitt, his whole meticulously charted political career is foundering on sharp shoals about which he was worried, but around which he seemed incapable of navigating.”[3]

Indeed, at first glance it might appear that AHCCCS has failed and is dragging down all those associated with it.

But, is that the case? Contrary evidence may be cited or a different perspective may be offered for the same facts. For example, AHCCCS may be criticized for a shaky start-up, or it may be seen as a somewhat remarkable transition for over 100,000 eligible persons from a diverse array of county-operated health care delivery systems to the state AHCCCS program. Slightly more than midway through the second program year, nineteen health plans are successfully providing care to nearly 190,000 individuals throughout the state.

Yet problems were so severe that in February and again in May of 1984, the Arizona State Legislature felt it necessary to make substantial revisions in the existing AHCCCS law. These revisions, requested by the governor, will profoundly affect the way AHCCCS carries out its mission of providing health care to eligible recipients. Any meaningful program analysis requires an understanding of these changes and the reasons they were made.

Changes in the Program

Changes made in the program by the Arizona Legislature in 1984 virtually all centered on one concern. That concern was cost containment. A secondary concern was accountability. This relates to the fact that the legislature had created AHCCCS and had never given the governor full authority to implement it. This time the legislature was determined that the governor would get essentially what he wanted so that responsibility for the program's success or failure would reside clearly in one location — the governor's office.

The legislative initiatives affecting AHCCCS took place in the Second Regular Session of the Thirty-sixth Legislature. The first of these, HB 2547, was requested by the governor to enable the state to assume all or part of the responsibilities of program administrator. The second, HB 2551, was concerned with controlling the “AHCCCS deficit” through a variety of cost containment

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om: Professor and Director, University Famli-Care, University of izona, Tucson, Arizona 85724.

measures. Both bills passed without serious political opposition.

Cost containment efforts took several forms in House Bill 2551—"AHCCCS administration; improvement."[4] The first was to tighten eligibility enrollment requirements so that a 90 day period—rather than a thirty day period—would be used for income calculation, then multiplied times four (three months times four for annual income) to determine financial eligibility. While the actuarial implications of this change from the previous formula are not completely clear, it represents a return to orginal AHCCCS income determination policy. Its impact will be to reduce the number of people potentially eligible for AHCCCS support.

In the area of enrollment, the program changes were designed to narrow the "window of vulnerability" that had existed during the first one and one half years of the program. That is, there was a thirty to forty-five day average wait from the time of eligibility determination until an eligible individual actually appeared on the membership roster of his/her selected plan. During this period, the state was obligated to pay for incurred medical costs on a fee-for-service basis. Legislators and administrators agreed that this was a major financial drain on the troubled program.

Accordingly, in the AHCCCS "improvement" legislation, the period between eligibility and enrollment was effectively eliminated for the Medically Needy/Medically Indigent (MN/MI) population through the imposition of auto-assignment, a system by which every eligible person is immediately assigned to a participating health plan in that individual's geographic area. This arrangement eliminates most fee-for-service expenditures by making the health plan responsible for each member's health needs from the earliest possible moment. This becomes particularly important to the state when the patient first becomes AHCCCS eligible while in a hospital setting (as often happens) and can be transferred directly to a health plan. The new legislation provides for only a two day grace period after assignment before a health plan assumes liability, during which time fee-for-service payments will be made by the state. In a similar fashion, the state has protected itself on retroactive coverage prior to eligibility determination by limiting fee-for-service responsibility to the counties to a single day.

A major potential area of savings initiated by the new legislation was in the area of hospital care. Hospitals are allowed to receive no more than 85% of billed charges from counties if the counties pay their bills within thirty days of receipt. Further, a freeze date of April 1, 1984 has been set for rates to be used in conjunction with the 85% formula. Similarly, plans are protected by limiting payment to 90% of billed charges for plans that pay their bills within 25 days of receipt. The director of AHCCCS is further given the authority to negotiate on behalf of plans with hospitals if the negotiated rates are deemed to be too high.

The bill goes on to propose a number of other c saving measures. One is aimed at recapturing third pa payments; another is directed to withholding payme from hospitals if timely notice is not given of t patient's admission. The legislation provides for st oversight of county eligibility determination, so th applicants who have incorrectly been determined to AHCCCS eligible become the financial responsibility the county — not the state. Should counties be late paying the state their share of the AHCCCS cost, t state may withhold certain interest monies to t counties. The burden of these and other changes is save money for the state and to pass costs to pla hospitals and counties.

In recognition of the responsibility issue, t legislation provides for the transfer of the AHCC Division in the Arizona Department of Health Services a new division reporting directly to the governor. Th coupled with previous legislation (H.B. 2547) whi made possible the replacement of the private sect administrator, insures that the entire program may vested in state administration. Further, it centralizes t authority for the administration of the program in t governor's office, requiring specific reports from t AHCCCS director to the governor and the legislature, well as certain reports from the governor to the leg lature.

Very few of the changes embodied in this ne legislation were concerned with quality of ca However, there is a requirement that AHCCCS devel a standard for quality health care and require t provider to implement this standard. Legislation giv AHCCCS the right to monitor the provider until su time as the standard is implemented. This chan reflects a general concern that during its first one a one half years of operation, there was inadequa auditing of program providers and insufficient info mation on encounter data transmitted from the pr viders to the state.

Reasons for Problems

Many reasons can be advanced for the proble experienced by AHCCCS during the first half of its thr year scheduled life span. The first of these may be th the program was created by the Arizona Sta Legislature with little participation from the governo office. When it became apparent that the legislature w unable to administer the program and that the govern could not do it without changes in the legislation, determination was made to give the responsibility to t governor. This has been accomplished with the leg lative changes already mentioned.

With regard to the presumed administrative failure AHCCCS during its first one and one half years, perha more fundamental an issue is that too much time w spent in crisis management and too little time spent standard setting and implementation. Even bas encounter data was unavailable to the AHCCCS a ministration for substantial periods of time. To quote t first year's annual report from AHCCCS: "The tw est plans, Arizona Family Physicians and Maricopa lth Plan, did not submit any encounter data for most he first operational year."[5] It is extremely difficult, if impossible, to manage a program in the absence of ounter data.

)ne reason encounter data were not more available that the plans themselves were not geared to a paid method of program administration. Coming m a fee-for-service orientation, most plans found that ed charges were the driving force for their infortion, rather than the "per member per month" data t guides prepaid health plan administrators in ermining their priorities. Unfortunately, the state was ble to alter this mind set substantially and plans tinue to function in a fee-for-service orientation.

)ne reason for the large exposure to fee-for-service ings was an adherence to a principle of limited choice plan members. It was felt that every member should e the opportunity to choose the plan in which he or wanted to enroll. Members were to be allowed the portunity to visit plans and compare notes with nds and relatives concerning services provided by se plans. All this took time and, thus, the thirty-days "window of vulnerability" developed. Corrective islation now allows the AHCCCS director to abridge ice and institute auto-assignment of MN/MI rollees to plans. There are many who think autoignment is a serious mistake that will result in a stantially higher number of grievances filed by mems against their plans.

'et another major, albeit seldom cited, reason for blems in the second year is the failure of the program incorporate non-poor members in the first year. A ndamental principle of the orginal AHCCCS legision was that county and state employees, together th employees of small businesses, would be couraged to join AHCCCS. To this end, a request for posal was put forward in late 1982 with a view toward inging non-poor members into AHCCCS sometime ring 1983. All bids received under this particular licitation were denied on the grounds that they were expensive. (One reason for this expense was a bstantial administrative surcharge levied by the state each bid to make it more comparable with private dustry.) To allow AHCCCS to go into its second year th no non-poor members was to subject it to a higher gree of adverse exposure than might otherwise have en anticipated.

Yet another reason for the problems experienced by ICCCS may relate to the large number of hypotheses ing tested simultaneously. When co-payment (and itially, co-premium), competitive bidding, gatekeeper ysicians, prepayment, a mixed population of poor and n-poor, and limited freedom of choice are all mbined in a single package, it is difficult to determine hich are the independent variables. This problem is w further exacerbated by major changes involving ne or more of these principles (e.g. limited freedom of oice) having been made by the legislature.

Successes of the Program

AHCCCS is not without its successes. It has been pointed out already that nearly 200,000 people are receiving care from a variety of providers in Arizona with relatively little difficulty at the local level. Perhaps this is sufficient evidence for the state to say that the program has been a success. There have, however, been studies to document this success.

Perhaps most significant among the various surveys was a sample survey carried out in November, 1983 of AHCCCS members in Maricopa County. At this time members were asked by the research firm of O'Neill and Associates how they felt about the program. The primary finding from this survey was that 76% of the members were satisfied with the health services they received under AHCCCS. Further, the study went on to show that 89% of those surveyed who had seen a physician in the past year were satisfied with the care they received. Moreover, 76% of those seeing a physician under the AHCCCS program reported having seen their regular doctor.

Other findings pertaining to waiting time were equally impressive in the O'Neill survey. Seventy-two percent reported having been able to see a doctor the same day they were sick. Sixty-eight percent said they had to wait less than 30 minutes to see their physician and 60% reported that they could get an appointment on the same day that they requested one from their plan. A majority (54%) even reported that their plan or physician called them back when they agreed to do so on the same day that the promise was made.

Less impressive aspects of the survey relate to knowledge regarding rights under the plan. Nearly two-thirds (65%) stated they did not know how to get an ambulance in an emergency through their plan. Seventy-one percent reported they did not know how to make a complaint about medical care provided to them, and 38% responded that they did not know how to get emergency medical care under AHCCCS when needed.[6]

Yet another study is the Physician Assessment of AHCCCS after the first seven months. This study, released in January, 1984 was somewhat less positive than the consumer survey. Nonetheless, two groups of physicians tended to feel quite positive about the program. The first were the gatekeeper physicians, a subset of primary care physicians surveyed concerning the program, and the second were managers, administrators and public health physicians. For example, only 14% of gatekeepers surveyed saw problems with the gatekeeper concept. In contrast, 46% of AHCCCS referral providers and subcontractors saw problems with the concept. Among physicians not involved with AHCCCS, one-third (33%) found fault with the concept. Forty-one percent of AHCCCS-involved gatekeepers felt that the gatekeeper restricts unnecessary utilization of specialty, inpatient and emergency room services, whereas only 13% of physician specialists felt the same way.[7]

The Rural Health Office at the University of Arizona, operating under Shared Services funding from the Federal Government, surveyed the attitudes of administrators in fifteen federally funded clinics throughout the state toward various aspects of the AHCCCS program. It is of some interest that the administrators overwhelmingly supported the gatekeeper role of physicians (93%), while also strongly supporting co-payment for services (87%), the range of services covered (87%), prepaid capitation (73%) and the bidding process (83%). Eighty-seven percent were even favorable to the payment level received by their clinics for member care. (The administrators were decidedly less enthusiastic about eligibility and enrollment requirements imposed by the program, with favorability ratings of 20% and 13%, respectively.)[8]

Yet another study of AHCCCS was carried out by the Area Marketing-Research Associates for the Arizona Physicians IPA, and released in November, 1983. This study was based on 278 interviews carried out on a stratified random sample of AHCCCS enrollees. Of those surveyed, 73.7% reported no problems with the system. (Of the one-fourth who reported experiencing problems, two-thirds of these were administrative in nature and one-third with the physician provider.) AHCCCS health care was reported to be good to excellent by 80.9% and almost half (46.9%) reported that AHCCCS care was of at least the same quality as that of other health care systems. Amazingly, over 90% of those surveyed reported no problems in becoming eligible (92.8%) or in enrolling and choosing an AHCCCS plan (91%).

The literature has not been totally unkind to AHCCCS. Generic articles have been benevolent in their treatment of the subject.[10] More specific references have been sympathetic. An article appearing in the *New England Journal of Medicine* in late 1983 referred to AHCCCS as "the first large-scale, statewide, public system of health-care financing and provision that transfers such a large degree of financial risk to providers who are willing to assume that risk." The article goes on to note that: "Although AHCCCS has come into being as a promising trial substitute for Medicaid, its basic financial and incentive structure can be adapted equally well to the reform of Medicare."[11]

To be sure, AHCCCS has had enormous problems in its brief life span. These problems have been heralded by the popular press and accepted by many as evidence of its failure. An analysis of the concerns about the system lead almost inevitably to concerns about cost and administration. When the service delivery aspects of AHCCCS are examined, however, the system is found to be working remarkably well. Evidence presented thus far indicates the program may be successful at the interface between provider and patient, yet less successful in the administrative arena. Only a comprehensive evaluation will provide an answer.

Need for Evaluation

This leads to a major shortcoming and long held concern about the program. AHCCCS was intende be a demonstration model for the country, only i dentally originating in Arizona. The unique advant that Arizona had to offer for this experiment was its p failure to initiate a Medicaid program. Thus, the s was clean for an experiment in a state that still provi care to indigent sick through county run health systems.

In keeping with the objective of mounting demonstration program, the Health Care Financ Administration (HCFA) agreed to run a major evaluat of AHCCCS. Committing some two and one-half mill dollars to this effort, HCFA spent considerable ti identifying the party or parties to carry out the propo evaluation. The result was that the program had bee operation for nearly one year before the ma evaluative effort got underway. Therefore, no basel data could be obtained directly by the HCFA evaluat team.

Fortunately, the Flinn Foundation, in conjunct with the Robert Wood Johnson Foundation, foresaw problem of need for baseline data. Working wit multi-disciplinary faculty group from the University Arizona and Arizona State University, the Foundat determined to support an intensive telephone survey health care for the poor in Arizona. Even this stu began only shortly before the AHCCCS program initiated and concluded after the program had be underway for over one month. (Survey dates w August 17, 1982 to November 7, 1982.)

In all, data were collected from interviews with 2, randomly selected adults and 1,155 children in fami whose 1981 income met or fell below 200% of AHCCCS program's eligibility criteria. In the case children being surveyed, the most knowledgeable ad in the family was interviewed as a proxy for the child. interviews were by telephone and carried out by trai interviewers employed by Louis Harris and Associat The purpose of the interviews was to establish basel data to assist in program documentation.

While it is not the purpose of this article to de baseline data findings, it is of some interest that amo those meeting AHCCCS eligibility criteria, 45% rep using the county health care facility in the past th years. Among those least likely to have used cou facilities were adults 65 and over who had access Medicare. A majority of those surveyed report satisfaction with the medical care they were receivin

While such data are not relevant to an evaluation the AHCCCS experience to date, they provide indication of how important background data can used to measure program success in the future. I anticipated that the Harris survey will be rerun at or n the end of the AHCCCS experiment. This will provid comparison with respect to numerous paramet regarding the success or failure of the program.

Little information is currently available regarding t major HCFA evaluation now being carried out Stanford Research Institute and selected subcontract umably, this large scale evaluation will provide an ver to questions concerning how successful the CCCS program has been in meeting each of its five or objectives. As outlined in the Waiver Request mitted by the Arizona Department of Health Services he Health Care Financing Administration in May, 2, these are as follows:

1. "To show that primary care physicians are both ing and able to manage the use and cost of medical services for specified populations."

2. "To demonstrate that the competitive bidding of *paid capitated contracts* will provide proper sician incentives for the conservative management medical care services, without an adverse effect on lity."

3. "To evaluate what effect the *inclusion of iness, county and state employees* will have on tivating health care providers to bid on AHCCCS."

4. "To show that the imposition of *minimal co-ments* will lead to a decrease in service utilization nout causing significant decreases in utilization for essary health services."

5. "To demonstrate that some *restriction of edom of choice* by recipients for selecting providers primary care physicians will not diminish their ity to receive appropriate health care services in a nified and efficient manner."[13]

he Waiver Request goes on to state six hypotheses ch the evaluation should measure. The evaluation ion of this document concludes that pre- and post nparisons and concurrent comparisons (involving acent states) will be the basic research designs used. noted, the actual evaluation called for in the proposal not to begin for over one year after this document submitted to the Federal Government. The result is , apart from data obtained by Harris and others, pre-t comparisons are now totally impossible to obtain. ecause so little attention was paid in the early months AHCCCS to evaluation, articles such as this on the cess or failure of AHCCCS will almost certainly ain hypothetical. The failure to gather adequate eline data was not for want of early and persistent uests for action at the local level. A much needed es of baseline studies involving the AHCCCS eligible ulation was proposed in the months preceding ect implementation.[14] Unfortunately, neither the eral nor the State Government acted on these uests for baseline data acquisition at a critical time in life of the AHCCCS experiment.

nother issue regarding the evaluation of AHCCCS its ultimate designation as a success or failure is the tifactorial nature of the experiment. Because so y different theories are being tested at the same , the program is extremely difficult to evaluate. This ident in the ADHS Waiver Request to HCFA, which es:

"It should be pointed out that it may be difficult in cases to separate the combined effects of co-ments, primary care case management, and capitation in findings and conclusions. However, attempts to do so should be made wherever possible."[15]

This reference is particularly kind in its treatment of the problem, since AHCCCS is testing considerably more than the three elements mentioned.

Lessons to Date

This consideration of evaluation and the failure to take advantage of timely opportunities in the acquisition of baseline data leads to consideration of lessons learned to date from the AHCCCS experiment.

Whether it has been learned or not, the *first lesson* should be not to enter into a demonstration program without establishing the evaluative mechanism to measure the outcome of that program. This rule was violated to such an egregious degree in the case of AHCCCS that, at best, program commentators will be left with speculation concerning program success or failure and those elements which may have been responsible for that success or failure. This was an unnecessary and anticipated problem which, for whatever reason, was not corrected by those responsible for funding and administering the program in its early stages.

A *second lesson* of the program is that the institution of such major organizational change as represented by AHCCCS requires more lead time and better planning than that provided in Arizona. To move over 100,000 health care recipients from one system to another, including changes in health care delivery sites and providers, requires that utilization, quality assurance and financial systems be in place before the program gets underway. Such was not the case when AHCCCS began. Arizona law made provision for a later start, but those responsible for program initiation felt it had to be underway by October 1, 1982 — less than one year after the enabling legislation was passed. This was clearly too short a time for implementation of so massive a program, and the problems attendant with its premature implementation could and should have been avoided through a longer lead time and better advance planning.

A *third lesson* is that the private sector is not necessarily better able to handle administration of programs like AHCCCS than the public sector. Stress should have been placed on finding an administrative staff with experience in prepaid financing of health care, be it public or private. An article of faith on the part of those who passed the enabling legislation, private sector participation in program administration has been — for whatever reason — an unfortunate part of the AHCCCS experience. Both the state and MSGI, a subsidiary of McDonnell Douglas Corporation, agreed to part company in February, 1984. The state has now assumed the role of program administrator and MSGI is no longer part of AHCCCS. Whatever the value of having an independent administrator may have been, it apparently was outweighed by the discontinuity of information and communication that occurred between the administrator, as contractor, and the state AHCCCS Division of ADHS. AHCCCS could have, and in retrospect, probably should have done it all — with personnel experienced in prepaid health care.

A *fourth lesson* that should have been learned to date, but which was not reflected in the remedial legislation passed to improve AHCCCS, is that eligibility determination and enrollment should be carried out in the same place, at the same time, and by a single agency. Rather than correcting this fundamental problem with the AHCCCS program (where the counties are responsible for eligibility and the administrator — now the state — is responsible for enrollment), the state chose to institute a process of auto-assignment, depriving the medically needy and medically indigent of any provider option at the time of enrollment. Although this obviates the thirty-day-plus "window of vulnerability," it does not address the fundamental need to combine eligibility and enrollment functions under state administration. By maintaining fifteen diverse county eligibility programs, instead of one state operated program, Arizona has committed itself to maintain program discontinuity through the end of the experimental period.

A *fifth lesson* yet to be learned (but to be faced in ultimate program evaluation, if not before) is that which comes with changing basic program objectives in midstream. By responding to the needs of those who designed the computerized auto-assignment process, thus denying choice of plans to the medically needy and medically indigent groups, a fundamental change has been made in the program philosophy. While procedures may be instituted to provide some degree of choice at a later date, this substantially alters the original AHCCCS concept of limited choice among eligible providers. In addition to insuring a higher level of grievance proceedings by members against plans, it makes much more difficult a meaningful evaluation in the important area of plan selection by members.

A *sixth lesson* that should have been learned from AHCCCS is that estimates of how many people will sign up for a medical care program are often inadequate. The budgetary shortfall which was noted in the beginning of this paper may be, in large part, due to underestimation of eligible enrollees in the system. Such problems are not uncommon for prepaid health plans. Indeed, underestimation of actual enrollment figures has plagued AHCCCS from the beginning. Regardless of the quality of administration or level of care provided, a program which has more enrollees than anticipated will be underbudgeted. It is likely that a substantial portion of the AHCCCS deficit is due to inadequate enrollment projections.

A *seventh lesson* which has been well learned by all concerned in the state is that a prepaid program should not be allowed to become a *de facto* fee-for-service program. By attempting to respond to pressures for more timely payments, MSGI and the state AHCCCS division made commitments which proved extremely costly. These commitments were to pay all obligations incurred for people declared AHCCCS eligible, but who had yet to select (or be assigned to) a provider p When this number grew to unacceptable proportic the program was faced with astronomical bills, wh obviated any possibility of adhering to a prog budget. As has been noted, several of the changes in AHCCCS law recently passed by the legislature w directed to stemming this fee-for-service hemorrha

An *eighth lesson* that should have been known fr experience elsewhere is that new demonstrat programs are professionally costly. The AHCC program has taken its toll of highly compete professionally trained administrators and may yet le more victims in its wake. Hopefully, neither AHCC advocates nor opponents will fault those who h departed as the cause of all the system's problems. M of the problems confronting AHCCCS are endemic any sweeping new social service program and are to expected. Those who have been responsible for program may have been highly competent and m indeed, have left because of changes they would h liked to make, but were not permitted to implemen

A *ninth lesson* which AHCCCS should have taught by now is that providers and patients will generally w well together, if allowed to do so. Assuming t administrative structures do not interfere, patients te to be satisfied with their providers and providers tend be solicitous of their patients' needs. Sufficient eviden should have been cited in this brief article to suggest t the medical care side of AHCCCS is working well. Wh we are still awaiting important quality assuran information, and although encounter data is lacki early reports indicate that the program has been a su cess in terms of delivering care to people in need.

A *tenth lesson* is that the AHCCCS program is mul factorial and therefore difficult to evaluate. Unfo tunately, the major evaluation effort underwritten the Federal Government is handicapped by the absen of adequate baseline data, as well as the multi-facto nature of the program. Observations concerning t program's success or failure may well vary, with so elements judged successful and others unsuccessful. the present juncture, this would appear to be the ca No amount of unfavorable press should lead an dependent observer to condemn the plan *in toto*. N should it be universally embraced. Rather, each eleme of the plan should be judged on its own merits — w professional outside assistance, where available.

Wherever it goes, Arizona can not turn back the clo In the words of Rogers, et al.:

"No one, particularly physicians and others who pr vide medical care, wants to return to the situation th existed in the pre-Medicaid era, when many lo income people received substantially less medical ca than the rest of the population."[16]

AHCCCS must run its course. Despite its current mi life crisis, AHCCCS will survive and ultimately evol into something better. AHCCCS is in trouble, but it is from dead.

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ompetitive Bidding for digent Patients:

hat Are the Lessons of the izona Experiment?

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he experience with competitive bidding for indigent alth care is evaluated with respect to the Arizona periment. Implementation of the bidding system is scribed and four key issues are identified: likelihood provider participation; effect of negotiation on dding; contract compliance by providers; and the cost containment potential of competitive bidding. Two rounds of bidding have shown that providers are willing to participate. While attractive for political reasons, the use of negotiation may have increased costs by creating incentives for providers to inflate their bids. Contract compliance, particularly reporting requirements, have not been enforced systematically, resulting in uncertainty over whether the state has received the "product" it purchased. While there is evidence that policy decisions made by the state have both weakened and strengthened the cost-containment incentives in the bidding process, the net effect of competitive bidding on indigent health care costs in Arizona cannot be measured directly.

Key Words: Competitive bidding, AHCCCS, Cost containment, Indigent

In November of 1981, Arizona lawmakers enacted the Arizona Health Care Cost Containment System (AHCCCS), which utilizes competitive bidding by providers to establish an acute health care delivery system for indigents.[1] The legislation describes, in general, a competitive bidding process for indigent patients which is a natural extension of the straightforward bidding processes used in other state procurement decisions. First, the State would define the rules governing the operation of the bidding system. Second, qualified organizations would be invited to submit bids according to these rules. Then, winning bidders would be selected on the basis of criteria known by participants prior to bid submission. Finally, contracts with winning bidders would be established and enforced to ensure that the state received value for dollars expended.

The application of straightforward, "procurement type" bidding processes to indigent medical care is potentially attractive to policymakers for several reasons. Since price levels are major determinants of contract awards under such processes, providers have an incentive to reduce fees and charges, or at least contain their rates of increase, in order to enhance the likelihood of winning contracts. Thus, competitive bidding has the potential of producing immediate savings for the state. Also, bidding may generate longer run savings because it can reward increased efficiency in the organization and delivery of health services. Providers who practice cost effective medicine can submit lower bids without reducing profits, again increasing the likelihood of winning contracts. Finally, under some competitive bidding systems providers have incentives to submit prices which reveal their actual or estimated costs of providing care to indigents.[2] This would provide information to policymakers under incentives which reward efficiency.

While the AHCCCS program has provided some useful information concerning the feasibility and effectiveness of procurement-type competitive bidding processes for indigent patients, it has also raised some difficult questions. In this article, we briefly describe the important components of the competitive bidding

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process utilized in AHCCCS, both as legislated and as actually implemented. We then address four policy related questions pertaining to competitive bidding drawing on the evidence from Arizona.

Components of the AHCCCS Competitive Bidding System

The AHCCCS legislation contained seven mechanisms intended to control program costs: a) prepaid capitated financing; b) capitation of the State by the Federal government; c) limitations on freedom of choice by consumers; d) cost sharing by consumers; e) primary care physicians acting as gatekeepers; f) competitive bidding to select a program administrator; and g) competitive bidding to select medical care providers. In this article we consider only the competitive bidding mechanism for providers.

During the first round of bidding, program administrators followed the directives of the legislation in placing few limits on the provider organizations that could submit bids or the geographical areas covered by bids. However, several other features of the bidding process as outlined in the legislation were modified in implementation. For instance, although the legislation invited separate bids in four service categories, (inpatient, outpatient, pharmacy, laboratory and x-ray) program administrators expressed a clear preference for bids covering all categories under one price ("full service bids"). Similarly, legislated population categories for bidding were respecified by AHCCCS officials, and bids in some categories, including private and government employee groups, were effectively ignored in the awarding of contracts. Although the legislation allowed latitude for an initial two-year contract, actual contracts were defined to cover a single year.

In addition to modifying these legislated components of the bidding process, program administrators made several important decisions concerning operational aspects of competitive bidding not directly addressed in the legislation. For example, program officials stated their intention to seek contractual capacity to serve a total number of indigents in each county that was equal to or in excess of the estimated number of indigents, and made clear their preference for more than one winning bidder in a given area. They also agreed to reimburse each winning bidder at the amount of its bid price, a standard practice in procurement situations but a policy not specifically endorsed in the AHCCCS legislation.

When bidding occurred again after completion of the first year of the program, some components of the process were redefined. For instance, EPSDT services for children were added to service requirements; bids for private and government employee groups were no longer required; the composition of the population groups covered by different bids was redefined; and the "preference" for full service bids was changed to a requirement. At the time, these changes were regarded primarily as "technical adjustments" to the bidding process.

Implementation of the Bidding Process

The components of the competitive bidding proc used in the initial round of bidding were put in pl between January and September of 1982. The first months were devoted primarily to defining rules regulations for the program, developing a Wai Request for submission to HCFA, and selecting a priv firm to assume major program management respo bilities. However, the drafting of Rules and Regulati was not completed as scheduled, requiring that bidd take place while "emergency" rules and regulati were in force. In effect, bidding organizations w asked to commit themselves to a program which was yet clearly defined. In addition, delays in hiring administrative firm, McAuto Systems Group (MS meant that the criteria for evaluating provider bids h not been developed prior to bid submission. Con quently, even in its very early stages, the AHCC competitive bidding process differed from straightforward procurement model on which it based, lacking both a definitive set of procedural ru and a well understood set of criteria for the selectio winning bidders.

Despite these shortcomings, a Request for Propo for Provider Services was released on July 2, 1982 contained a draft of the prototype provider contra estimates of service utilization, population and costs each county, lists of required services, a gene description of factors which would be considered in evaluation of bids, and forms to be completed in calculation of bid prices. The deadline for receipt of b was August 6 at which time 39 full service bids w received from 20 different organizations.[3] Bids wh were considered qualified and technically acceptal were ranked according to a composite price, which essentially a weighted average of the bid prices for ea population category with weights determined by estimated number of indigents per category. T outcome of this evaluation process was a determinati by AHCCCS officials that the program budget insufficient to cover projected enrollment and ut zation at the prices bid in six of the fourteen counti The AHCCCS Division staff within the State Departme of Health Services, MSGI representatives, st legislators and staff from the Attorney General's off met to discuss possible solutions. Direct negotiati with bidders over their prices was rejected on grounds that state procurement precedent did not all such an approach. Instead, it was decided to requ "voluntary price reductions" (VPR) on the part bidders in the six counties. It was suggested that if pri reductions were insufficient to meet AHCCCS bud constraints all bids in those counties would be rejec and providers would be asked to resubmit bids.

On August 30, contract offers were made to bidders eight counties and conditional contract offers, cont gent on formal acceptance of VPRs, were made in t remaining six counties with a due date of September Eligibility determination for program enrollees began counties on September 1 as scheduled. However, in absence of contracts in six counties, enrollment uld only begin with providers in the eight counties h contract awards. The VPRs offered by providers re subsequently judged acceptable allowing rollment to begin in these counties on September 25. hough a significant number of details remained to be ved before contracts with providers were formally ned, delivery of services by winning bidders began on tober 1, 1982, again according to schedule.

n the second year of the program, the bidding cycle s initiated much earlier, with an invitation to bid ued on May 17. When bids were received on June 17 it s determined that the state's budget would be ceeded if contracts were awarded at the bid prices omitted in all counties. As a result, officials repeated eir first round request for VPRs, with the rejection of bids as an alternative if the reductions offered by oviders were not sufficient. However, the reductions ered by providers in only two counties were cepted. In the remaining counties, a second invitation bid was issued on July 15. New bids were submitted on y 25 and subsequently found to be sufficiently low to ow the program to proceed in its second year.

ues Related to Competitive Bidding

The experience in Arizona raises a number of issues ncerning the appropriate design of bidding systems indigent patients, the problems which can be pected in their implementation, and their likely ectiveness in containing costs. The remainder of this icle addresses four issues that seem particularly portant for consideration by policymakers.

ll Providers Participate in Competitive Bidding ocesses?

The evidence from two rounds of bidding in Arizona both urban and rural areas indicates that providers l participate in a competitive bidding process even nen uncertainty is great. In 1982, twenty distinct ganizations of three different types submitted full rvice bids in at least one county. Four of these ganizations were existing HMOs, four were county vernments, and twelve were individual practice sociations (IPAs) formed especially to bid for indigent tients. Of the IPA bidders, five had strong hospital iliations. Arizona Family Physician's IPA, a statewide nsortium of family physicians, bid to provide services all counties during the first year of the program. As a sult of the participation of these organizations, there ere multiple bids submitted in twelve of Arizona's urteen counties, with more than two bidders in five unties.[3]

n the second round of bidding, when there was less certainty about AHCCCS in general and the comtitive bidding process in particular, the response by oviders was even stronger. Twenty-three distinct ovider organizations submitted bids. Of the four MOs that participated in the first round, one chose not bid in year two while two completed a merger bmitting one bid for the consolidated organization. As a result, only two of the twenty-three bidders in 1983 were established HMOs. Of the four county governments that bid in 1982, three bid again in 1983, while the fourth chose to participate as part of a larger, statewide IPA. The major change in provider participation in the second round of bidding was an expansion in IPA bidders from twelve to eighteen, with eight having strong hospital affiliations. In 1983 there were two or more bidders in all Arizona counties and four or more bidders in all but one county. Three IPAs competed against each other in virtually all areas of the state.

It is clear that a competitive bidding process can attract a sufficient number of providers to be a viable component of indigent medical care programs. This is particularly striking since few physicians in Arizona had any knowledge of or experience with prepayment prior to AHCCCS. The Arizona experiment demonstrates that providers can respond very quickly to economic incentives to form prepaid organizations for the purpose of acquiring new patients or retaining existing ones.[4] In the long run, the development of large numbers of prepaid organizations through the bidding process could have dramatic implications for the medical care delivery system in Arizona. Already, these organizations are seeking to expand beyond indigent care to the private sector where they hope to be offered as options in health benefit plans.

What Effect Does the Introduction of Negotiation Have on Competitive Bidding?

The State's request for VPRs by bidders was the first public indication that the use of straightforward competitive bidding to establish a medical care delivery system may be incompatible with the political reality of fixed budgets. The request for voluntary reductions backed by a threat to reject all bids if bidders did not reduce their prices was, in fact, a form of negotiation — although not technically labelled as such by state officials. The decision to introduce negotiation into the selection of providers had important consequences for provider behavior, and as a result, the effectiveness of the bidding process in containing costs.

Voluntary price reductions in round one were requested in part because public officials felt pressure to provide early "evidence" of success in cost containment in AHCCCS. Claims of a four to five million dollar savings attributed to the use of negotiation provided "proof" of this success.[5] It is difficult, however, to accept administrative claims of cost savings attributable to negotiation at face value when state officials signalled providers prior to bidding that negotiation would likely occur, thereby in effect creating the high bid prices that became the starting point for negotiations. A second reason that negotiation was deemed necessary related to the changing economic and social climate in Arizona. In particular, a) a Supreme Court ruling implied that illegal aliens could not be excluded from the program, b) there was uncertainty over the eligibility and source of funding for care of eligible Native Americans, and c) there were increasing numbers of unemployed

Arizonans as a result of the 1981-1982 recession.[6] These considerations created fears that the projected program budget would be insufficient to cover the number of program enrollees and created further pressure on officials to reduce the price contained in provider bids.

Finally, there was a lack of confidence on the part of program officials that the version of competitive bidding they adopted would generate low bids. When more than one winning bidder is selected and all winners are reimbursed at their bid prices, there is an incentive for bidders to try to "outguess" their competitors, rather than simply submitting a bid which reflects estimated costs.[7] Winning bids are further inflated if bidders expect some sort of negotiation to occur. This was true in Arizona even during the first round of bidding, and many organizations therefore included a "cushion" in their bids which could be negotiated away. Thus, uncertainty about the ability of competition among the bidders to contain prices provided additional impetus for officials to use negotiation in the bidding process.

The suggestion on the part of state officials that a form of negotiation might be used in round one of the bidding process probably was sufficient to generate some inflation of bids in that round. Once a precedent involving VPRs was established, providers expected negotiation to be an integral part of the bidding process in round two and submitted bid prices which took this into account. They then offered reductions of approximately the same magnitude as were necessary for the state to meet its budget constraints in round one. However, reductions of a greater magnitude were deemed necessary in round two. Therefore, the provider price reductions were rejected and rebidding occurred. The problem now faced by the state is whether escalating cycles of negotiation and rebidding will be needed in subsequent rounds of the provider selection process. Given that negotiation and rejection of bids has become an integral part of the bidding process in AHCCCS, it is difficult to say what steps can be taken to resolve the problem. If AHCCCS is continued beyond its three year demonstration period, one scenario would involve a strong effort by the State to convince providers that policy had changed and that the bids they submitted would stand — with no negotiation or rebidding. Bidding would then be scheduled to occur prior to the final determination of the budget by the legislature in order to reduce pressure to constrain bids to fit within a predetermined budget. This approach could entail high initial costs since providers are likely to be skeptical the State will stand firm in its intention, given their experience in the first rounds of bidding. A second possible scenario would be for officials to request legislative authority to negotiate directly with individual providers over price. This mechanism would be similar to the system used in California, where rates charged by hospitals for Medi-Cal patients are determined prospectively by a negotiator.[8] This would move the AHCCCS competitive bidding process even further away from a procurement type bidding process, but might be politically attractive since it would g state officials the appearance of greater budget contr

Did Providers Uphold Their Contractual Responsibilities?

Contracts awarded to winning bidders specify service and reporting activities required of provide These requirements are an integral part of the bidd process since, theoretically, they allow the state to h providers accountable so that the public can be assu that it is receiving the agreed upon medical services return for tax dollars. In the first year of AHCCCS, contracts signed by providers specified only a limit range of sanctions for noncompliance, including withdrawal of contracts. Providers were aware, ho ever, of the political, legal and bureaucratic proble inherent in contract withdrawal in the initial year of program and therefore viewed it as unlikely. By y two, the rules and regulations provided the State wit greater variety of sanctions to apply in situations noncompliance.

The responsibility for contract compliance in the ea stages of AHCCCS was divided among MSGI, the St AHCCCS Division, and federal officials. The Health C Financing Administration (HCFA) is responsible interim reports on State Medicaid Operations. Region IV Office completed a report on AHCCCS April of 1983 addressing the areas of administrative a financial organization, coverage for required servic and quality assurance. This evaluation was orient more towards the design and implementation AHCCCS at the state and administrator level than contract compliance by specific providers. The St AHCCCS Division undertook medical reviews of sor plans through site visits in the spring of 1983 and MS contracted for a similar review that summer. The evaluations were aimed largely at quality of care a addressed the credentials, facilities, environment, a quality assurance systems of each AHCCCS plan. T financial status of plans is monitored through repo which they are required to file periodically with t private administrator. One set of reports, filed month indicates the status and age of outstanding debt fro plans to subcontractors. Other quarterly financ reports document provider financial status, includi expenditures, operating costs and profits.

During the first year of AHCCCS, only 27.6 percent the required reports on outstanding debt to su contractors had been filed by plans. Furthermore, of t 17 providers under contract in year one, only seven h filed any of their quarterly financial reports. A total 23.5 percent of these reports had been submitted by providers. There is no evidence that any efforts we taken by the private administrator or the state during t first year of the program to enforce compliance with t reporting aspects of provider contractual requiremen

While there is little quantitative evidence regardi the quality of care provided by plans, there is also systematic evidence that the quality of care provid

er AHCCCS is different than care provided by
icipating physicians to their private patients. It is
r, however, that unless the State undertakes more
gent monitoring of the finances of winning bidders
the care they provide, and unless sanctions are
lied in the case of noncompliance, the integrity of
competitive bidding process implemented by the
e will remain questionable.

l Competitive Bidding Contain Program Costs?

will be difficult to determine the effect that the
zona experiment, as a whole, has had on indigent
dical care costs. Comparisons with the costs of
vering care under Arizona's delivery system prior to
CCCS are complicated by differences in benefits and
gram eligibility and by uneven record keeping on
part of county governments. Comparisons with the
s of Medicaid in other states require that a
mparable" population be constructed for research
poses and that state differences in benefits and
ibility requirements be taken into account. Even if
h evaluations prove feasible it would probably not be
sible to isolate the cost containment impact of
npetitive bidding relative to the other cost con-
ment features of AHCCCS as listed above.

is possible, however, to describe those factors which
er reduce or enhance the likelihood that com-
itive bidding, as implemented in Arizona, has
rained costs. For instance, a number of decisions
de early in the program primarily for political reasons
uced the cost containment potential of the bidding
cess. First, the decision to select multiple winning
ders in each county increased the likelihood that any
en bid would be selected as a "winner," and there-
e weakened the incentives for providers to submit
-priced bids. The likelihood that the State would
gotiate over prices after bids were submitted also
akened incentives for low initial bids.

n the second round of bidding, there was concern on
part of the State for maintaining continuity of care
enrollees and for avoiding re-enrollment of all
gram eligibles. Incumbent bidders may have per-
ved this concern as providing them with some
tection against new competitors; if so, their
entives for submitting low bids in the second round
re weakened. (In fact, in Maricopa County [Phoenix]
State did not award the County, an incumbent
der, a contract to serve the medically needy/medi-
ly indigent on the grounds that its price was too high.
s suggests that there may be a reassessment on the
t of the bidders of the "protection" which being an
umbent provides in the bidding process in future
unds.) Another state policy decision in the second
und may have further weakened cost containment
entives: officials decided that re-enrollment of
eviously enrolled indigents to the same plans would
automatic unless enrollees made a positive decision
change providers. As a result, new winning bidders
uld have ready access only to the pool of newly
clared eligibles, reducing the potential rewards to new organizations entering the bidding process.

Although these four policy decisions by the State probably weakened the cost containment incentives in the bidding process and, therefore, inflated bids, there were other considerations which drove bid prices down. For instance, in the first round it was expected that AHCCCS winning bidders would be offered to private groups. Some organizations may have submitted low bids for indigent patients to ensure that they would have access to employee groups. An incentive for low bids which may have been important in the second round was the relatively large number of bidders in Maricopa County[7] and Pima County[5] in the first year. The literature on bidding suggests that price competition is enhanced, within limits, as the number of bidders increases. Finally, the policy of "assignment" adopted by the State in the first round may have strengthened incentives for low bids in round two. Under this policy, which was not well-defined prior to the initial submission of bids, the State assigned eligibles, who did not select among available providers within a specified time period, to the lowest priced plans. Therefore, the lowest priced winning bidders were rewarded with more enrollees. The establishment of this policy in the first round may have strengthened incentives for low bids in round two.

Conclusions

While the cost containment potential of competitive bidding processes for indigent medical care programs has an attraction for policymakers, and providers are apparently willing to form bidding organizations and to participate in such processes in significant numbers, the experience in Arizona has demonstrated that procurement type bidding processes can be technically very difficult to implement. Furthermore, the Arizona experience has revealed major political liabilities in the application of these bidding systems to indigent medical care. Political pressure generated by short run budgetary concerns can cause State officials to set aside the results of the bidding process in favor of more direct attempts to influence provider prices. This weakens the long run cost containment incentives in competitive bidding. Therefore, the reality of competitive bidding, and particularly its potential to contain costs, may fall short of the expectations of its proponents based on economic theory and historical experience in other less complex, less politically explosive procurement situations.

Acknowledgements

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Forum, Washington, D.C., February 10, 1984, entitled: "Competitive Bidding to Contain Cost: A Look at Arizona's AHCCCS Program."

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AHCCCS — The Pima County Experience

Jim Murphy
JoAnne Kauffman

Historical Perspective

Until 1982, Arizona was the only state in the nation that did not participate in the Medicaid program. In Arizona, the individual counties were mandated to provide indigent health care services from county tax revenues. While Arizona was losing millions of dollars in federal revenues every year by not participating in the Medicaid program, Arizona taxpayers were being doubly taxed to finance indigent health care. Counties had some flexibility in the number and type of services provided and in the setting of eligibility standards. This resulted in an inequitable distribution of services across the state.

Pima County has historically been a leader in the provision of health services to the indigent and in realistic eligibility standards. For the past 15 years, Pima County has been a strong, and at times the only, proponent for the passage of Medicaid in Arizona, means to provide equitable health care to the indi and to, hopefully, relieve the growing financial bu on counties.

In 1974, the counties successfully lobbied legislature to pass a law establishing a Medi program. However, the legislature never appropri funds for the program and counties retained financial responsibility for indigent health care 1982. During this eight year period, the increasing of providing health care and the passage of a loca limitation law forced several counties to the verg bankruptcy and required the state to provide fina bailouts. This situation, coupled with local initia efforts to enact the existing Medicaid legislation, for the legislature to find a solution to Arizona's health crisis.

Arizona's Answer to Medicaid

In the fall of 1981, the legislature adopted a three demonstration program (AHCCCS) as Arizona's ans to Medicaid. The program, which was based lar upon the enrollment of certified indigents in prep capitated HMO-type plans, was to be jointly finance the state, the Federal Government, and the counti

The proposed outcomes of this demonstra program were to be: a reduction of the coun financial responsibility; a reduction in overall prog costs due to private sector competition; statew eligibility standards and service levels; and freedo choice.

Legislative Mandates

Cost to Participate

The county's contribution to AHCCCS was based percentage of the county's total indigent care budget 1980/1981. However, since AHCCCS had recei Medicaid waivers, long term care, home health c occupational therapy, family planning, and several ot services traditionally provided to the indigent by P County, were not covered under the AHCCCS progr The legislation further mandated that the cou continue to provide these services at county expense effect, for Pima County in the first nine months AHCCCS, this resulted in a $5,000,000 double paym for noncovered services. The legislation also manda that counties maintain the eligibility standards in ef in January, 1981. Since Pima County's income standa were higher than those adopted by AHCCCS, th continue to be individuals who are still eligible for t care from the county. In April of 1984, these "cou eligibles" numbered over 900, and the projected cos their care for FY 84-85 is estimated to be 1.2 mill dollars.

Eligibility

The state program required counties to administer eligibility function for the Medically Indigent (MI) Medically Needy (MN) AHCCCS population mandated that all existing county eligible patients recertified for AHCCCS. The eligibility determinat requirements adopted by the state more than doub

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e time needed to make an eligibility determination. In dition, AHCCCS required that the Medically Indigent d Medically Needy be recertified every six months. nder the previous county eligibility program, dividuals were certified for one year. The combination recertification and the shorter eligibility period rced counties to greatly expand the eligibility nction. During the first year of AHCCCS, Pima ounty's eligibility staff increased from 17 to 50 nployees, and the cost of the eligibility function creased from $246,000 to $808,000. Since eligibility etermination is critical to the AHCCCS program and ust be done consistently statewide, this function ould have been provided by the state or the AHCCCS ogram. However, the state, by mandating that unties continue to be responsible for eligibility, fectively shifted additional program costs back to unties.

art-up Costs

AHCCCS was implemented statewide in less than nine onths. Due to this excessively short time frame, many licies, procedures, and forms were not in place when e program began. In some instances, it took three to months to finalize forms and procedures. As eviously mentioned, even if individuals were "county gible" on September 30, 1982, they had to be certified and enrolled—a separate process—in HCCCS before they were eligible to be served by a cal AHCCCS provider after October 1, 1982. Since unty eligibility workers were not totally trained by the te, and not all eligibility forms were available by ctober 1, 1982, it was certainly not possible to etermine the eligibility of thousands of people. It ould be much like a situation in which all holders of oldwaters' and Sears' credit cards were told that next eek their cards were no longer valid and they would ve to go to a third party to initiate new credit plications. Thousands of individuals were caught in is AHCCCS Catch 22. The county, after October 1, 82, was no longer responsible for their care, but they uld not complete the process to be covered by HCCCS. Even though the county was not legally sponsible, the county could not turn its back on those had previously served, and therefore continued to re for these individuals until they could complete the HCCCS process. Since AHCCCS instructions and rocedures to be reimbursed as a fee-for-service rovider in the early months were not well formulated, e county knew it would probably suffer a financial ss; however, it could not turn its back on its previous ients. During the first three months of AHCCCS, Kino ommunity Hospital (Pima County's hospital) incurred pproximately $1.5 million in bad debts from the Catch 2 population, solely attributable to the hasty nplementation of AHCCCS.

ounty Hospital

Arizona counties which operated county hospitals ere impacted more severely in the conversion to HCCCS. Prior to AHCCCS, county hospitals served 100% of the indigent population and operated at or near capacity. Their operating losses were generally the result of "notch group" bad debts. With the conversion to AHCCCS, counties were placed in the position of either selling their hospitals immediately and becoming strictly a third-party payor for non-AHCCCS eligibles and non-AHCCCS covered services, or competing with the private sector for indigent patients. The decision to sell or retain a county hospital was further complicated by the fact that AHCCCS is a three-year demonstration project, and if AHCCCS did not succeed, the potential for full responsibility for indigent health care reverting to the counties remained. Pima County chose to retain its hospital, establish an HMO, and compete for patients. With the implementation of AHCCCS, the patient census at the county hospital decreased by 50% within the first few months. This resulted in a layoff of approximately 200 hospital (county) employees within the first year of AHCCCS. However, staffing reductions could not be accomplished, or staffing ratios stabilized, as quickly as the census decreased, which resulted in major operational losses at the hospital during the first year of AHCCCS.

Other Cost Shifts

The original AHCCCS legislation provided for 30 days' retroactive coverage for emergency care from the date of the eligibility application. This allowed a county hospital, or any other provider, to bill AHCCCS fee-for-service for any emergency care and/or admission provided up to 30 days prior to the patient's application for AHCCCS eligibility. In October 1983, this provision was changed to allow only 5 days' retroactive coverage from the date of eligibility certification. This change shifted coverage of over 30 days of emergency care from AHCCCS back to the counties. Current legislation proposes only one day retroactive coverage from the date of enrollment in a health plan — a further cost shift to the counties. Currently, 25% of the applications for AHCCCS eligibility are a result of emergency medical treatment needs. The effect of this proposal will be a further cost shift to the counties, the magnitude of which cannot be estimated at this time.

It is also proposed that the eligibility function be required to conduct enrollment. This function had previously been that of the AHCCCS administrator who was paid for same. The additional responsibility, coupled with the one day retro provision, will probably require counties to add more eligibility staff and further shift AHCCCS-related costs to the counties.

Conclusion

Pima County continues to be a strong proponent of the concepts underlying AHCCCS—cost containment, capitation in HMO-type health plans, private sector competition and freedom of choice. However, due to cost shifts, the failure of AHCCCS to provide the full range of Medicaid services, hasty implementation which resulted in communication procedural problems, poor administration, and cost shifts, many of these concepts have not been realized. Certainly the program has failed to provide Pima County with the promised savings in indigent health care expenditures. Pima County's indigent health care expenditures were $34,756,200 in FY 1980/1981; $32,997,463 in 1981/1982, the year before AHCCCS; and $39,889,468 in 1982/1983, which included nine months of AHCCCS.

In spite of the problems of the past, Pima County continues to work with the Governor, the legislature, and state staff in trying to make AHCCCS work. Recognition of many of the problems noted by counties in the past are being addressed; however, continued efforts of the state to cost-shift to counties, hospitals, and system providers raise concern about the future viability of the program.

Is AHCCCS Working in the Rural Areas?

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Susan Moher, M.Ed.*

Introduction

Eighteen months following the beginning of the Arizona Health Care Cost Containment System (AHCCCS), major questions remain unanswered as to how effectively the program is functioning. The current reorganization is in large part a response to one question whose answer existed but went unheeded for too long: "Is AHCCCS being effectively administered?" Given previous experience, it is appropriate that we pay more attention to other significant questions and put more effort into concurrent evaluation of the program.

An extremely important question addressed recently by the Rural Health Office of the University of Arizona is: "Is AHCCCS working in the rural, medically underserved areas?" An assessment of the impact of AHCCCS in these areas is extremely important from a number of perspectives. First, the very survivability of the clinics serving these areas can be at stake, since the percentage of AHCCCS-eligible patients averages over three times that of the average family practice, i.e., approximately 25%, and this population experiences relatively high morbidity. Moreover, the previous defunding of four clinics and other threatened cutbacks in federal subsidies have placed more than half of these clinics in financial jeopardy. Secondly, while AHCCCS legislation was developed by urbanites, f Hill-Burton to the National Health Service Corps, federal government has made a repeated commitm to equity in the delivery of health services to populations. The support of federally-subsidized r clinics involves particular consideration of the follow characteristics:

*Their isolation frequently necessitates long dista calls and time consuming visits by an undermanned for technical assistance, but the telephone and op tunity costs involved preclude this on a regular bas

*Their administrators are already immersed in a tional bureaucratic considerations such as fed contract compliance reports, Rural Medicare, Com nity Board meetings, and Public Health Service g applications.

Finally, while the implementation of AHCCCS underserved areas has some unique aspects, these r clinics also exemplify many of the effects that will oc with all subcontractors, a much neglected group in evaluation of AHCCCS which heretofore has focu largely on the Program's impact on either the Plan or enrollee.

Methodology

As principal provider of technical assistance to r clinics, administrator of the National Health Ser Corps (NHSC) Contract and liaison with med students looking for rural practice models, the R Health Office (RHO) of the University of Arizona h vested interest in the viability of federally-suppo health centers located in rural, underserved areas 1983 the RHO, in cooperation with the Mar Community Clinic, was awarded a Shared Services g by the Public Health Service to provide technical as tance to these centers which would result in increa revenues from the AHCCCS program.

In order to document the attitudes of rural provi and to ascertain their needs in administering AHCCCS program, a questionnaire followed b structured interview was administered to all 15 of federally-subsidized rural clinics with AHC contracts in February and March of 1984. In addition, federally-mandated BCRR reports for 1982 and 1 were reviewed and compared. The map indicates locations of these 15 rural clinics, ranging in size fr two sites staffed by single physicians assistants to three-physician practice. Collectively these clinics se approximately 150,000 patients.

Program Evaluation Results

Table 1 presents the range of changes which h occurred among all 11 of the 15 clinics operat throughout the past two years for selected producti indicators recorded on the BCRR reports. (AHC began in October 1982. Because of the Program's s startup and the availability of data, for purposes of analysis, 1982 is considered pre-AHCCCS). This c reveals wide variation in clinic productivity with m practices losing patients than gaining; for exampl

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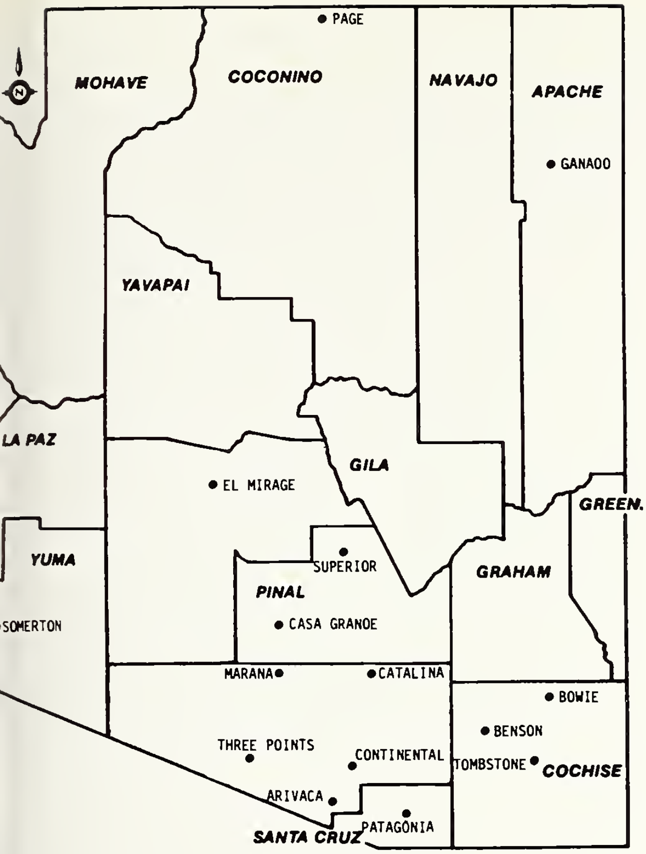

derally-Assisted Rural Clinics with AHCCCS Subcontracts

ysician leaving the clinic, and thus having immediate ed for an increased patient load. For the median actice, nevertheless, both charges and collections creased faster than expenditures. A significant contri- tor to this increase was, of course, AHCCCS; and any of the attitudinal critiques of the Program by the nic administrators were tempered by the acknowl- gment of this contribution.

Table 2 summarizes the opinions of the 15 clinic administrators on selected aspects of the AHCCCS legislation.

Table 2
Percent of Administrators Agreeing with the Following Aspects of the AHCCCS Program

Item	Percent
Gatekeeper Role of Physicians	93
Co-payment for Services	87
Bidding Process	73
Services Covered	87
Prepaid Capitation	73
Eligibility Requirements	20
Enrollment Requirements	13
Payment Level for Enrolled Patients	87

The greatest areas of agreement among the clinic administrators were support for the gatekeeper role and dissatisfaction with the eligibility and enrollment requirements. Two administrators of the larger clinics expressed strong dissatisfaction with the emphasis for cost containment coming from denial of services rather than from provider initiatives. The greatest challenge to cost containment was identified as directing the AHCCCS patients away from a crisis orientation to medical care.

Table 3 summarizes the evaluations of the 15 clinic administrators on the performance of the major players in the AHCCCS system. None of these organizations received a high rating. (The smaller plans, such as Pinal General Hospital and Medical Care Systems received higher ratings than the larger plans, e.g., Arizona Physicians IPA and AHCCCS Patients Choice.) Seven of the clinics report never having received face-to-face technical assistance from one of their parent plans. Five report no such assistance from the County, and 12 report no such assistance from McAuto.

Table 1
1982-1983 Productivity Changes for Federally Assisted Rural Clinics in Arizona*

	Lowest	Second Lowest	Median	Second Highest	Highest
% change in total encounters	-56	-47	+3	+34	+63
% change in total patients	-84	-62	-4	+20	+22
% change in total collections	-41	-32	+12	+99	+122
% change in total charges	-36	-33	+24	+60	+73
% change in total expenditures	-41	-35	-5	+22	+100

*N=11

Table 3
Percent of Administrators Rating Performance as Good or Excellent

Organization	Percent
AHCCCS Plans (Prime Contractors)	33
County Eligibility Office	33
Department of Economic Security	13
McAuto	0
State AHCCCS	13
Your Staff	93
Newspaper Coverage	53

Table 4 summarizes the perceptions of the clinic administrators on the impact of AHCCCS on patient care.

Table 4
Percent of Clinic Administrators Rating Following Aspects of Care as Worse or Much Worse

Aspect	Percent
Quality of Care	0
Access to Care	0
Patient Satisfaction with Care	0
Appropriateness of visit (when patient decides to see doctor)	7
Appropriateness of Referrals	0

As with the physician survey conducted by the Arizona Medical Association and the consumer survey conducted by the Department of Health Services, the rural clinic administrators generally did not feel that AHCCCS has been detrimental to patient care. In fact, the vast majority felt it had absolutely no impact on the quality of care. (The negative interpretation of this is that AHCCCS has had no impact on medical practice and, indeed, the risk pool incentives were either misunderstood or ignored at the administrator level.) Cited in the interviews as specific areas of improvement in patient care, however, were continuity of care and patient advocacy. Anecdotal information identified the role strain between gatekeepers and specialists as particularly acute in some rural areas where dissatisfied specialists might not accept referrals.

In a position paper authored by the Arizona Association of Community Health Centers one year ago, the rural clinics berated the meager educational and technical assistance afforded them by the State, the County, and the Plans. Over the past year, there has been inadequate improvement on these fronts with the exception of eligibility and enrollment workers periodically working at eight of the 15 clinic sites. These clinics have learned some of the most complex and innovative concepts in health care financing today by trial and error—in spite of, and not because of, the AHCCCS infrastructure. The survey results reveal acceptance of many of the medical and legislative concepts of the program with widespread repudia
of the administrative hassles which have beleaguere
providers, the extra steps in communication requi
for subcontractors only exacerbating these probler

Technical Assistance Needs Assessment

While identified areas for program improvem
permeated all levels of AHCCCS management, beca
of the ongoing reorganization at the State and Cou
levels, the authors decided to focus attention on
relationships between the clinics and the Plans. M
rural clinics have found it to their advantage to
affiliated with all Plans operating within their catchm
area, i.e., a single clinic can be relating to four par
Plans. On several occasions the authors learned
instances where clinic contracts were thwarted at
Plan level by provider competitors. It would seem th
preferable economic strategy would be to have
decisions made at the subcontractor level, i.e., to h
the Plans compete for contracts. Alternatively, the
teria for subcontractor eligibility should be clarifie
such affiliations are not open to all accredited provid

Two principal needs were identified by the author
priorities for technical assistance—needs which sho
heretofore have been fulfilled by the Plans: 1) assista
with payment monitoring and 2) assistance with m
keting.

With regard to the very important aspect of paym
the authors actually found the clinics surprisingly pl
in the 12 clinics where uncertainty existed as to the e
reimbursement and incentive process and how
validate the accuracy of the reimbursement. (Two cli
did not understand the basics of when and how to "
McAuto"). With manual data systems and Plan re
bursement policies, which have changed with
adequate notice or explanation, many of the rural cli
have been almost completely at the mercy of the P
accountants.

Even more surprising was the fact that, almost
months after the Program's inception, eight of the cl
administrators were unaware of the patients' rights
the Plan's responsibilities in basic covered services s
as EPSDT and emergency services. Because the servi
not included under primary or specialty care are
Plan's responsibility and thus, the Plan's expense, th
responsibilities must be monitored by the State adm
strators to ensure contract compliance. Cont
compliance in rural areas will be more expensive tha
urban areas and thus, should receive partic
attention. A comprehensive gatekeeper education p
gram sponsored by each Plan would seem to be in ord

The clinics were divided on the need for market
the AHCCCS program and on the need for support
their eligible population with eligibility and enrollm
information. The six smallest, established clinics did
perceive marketing as a high priority. The gene
reasons given for not needing such support were t
"everyone knows everyone in a small, rural area" a
"the eligible patients are 'system savvy'; they know h
to use the system to their advantage." In the lat

ance, the rural areas may have had higher per- tages of the chronically indigent. From the larger ic administrators' point of view, the major deterrents narketing were lack of staff time and ignorance of keting strategy. It appeared to the authors that keting in a rural area is so inherently difficult, and concept so new, that its need may exist but be uently unrecognized in the more rural, less npetitive areas.

om the patients' point of view, the administrators d pride and perceived lack of privacy as major errents to Plan enrollment. To counter this, the hors suggested that AHCCCS promotion emphasize unction as an insurance program. Another deterrent enrollment that surfaced was the sliding fee scale ch can slide so close to zero that the hassles of ollment are not worthwhile to eligible patients. In case, clinic staff were counseled that they make the ent understand they are liable for the entire fee if remain unenrolled. Finally, the low level of literacy the need for communication in Spanish were eatedly indicated as of paramount importance in the gn of eligibility and enrollment information.

ll clinic administrators reported negligible assistance marketing from their parent Plans, a clear compo- t of the ten to fifteen percent of administrative costs rded to all prime contractors. The system, in fact, ld not seem to reward such assistance for those Plans utilizing a capitated method of reimbursement. nsequently, many Plan enrollees could under-utilize ices or revert to use of the nearest emergency room, e they simply would not be aware of which clinics e AHCCCS providers for their Plan. This would call closer cooperation in advertising between the Plan the subcontractor, especially in the development of ple, graphic (reduced reliance on ability to read), and ividualized brochures on the rights and responsi- ties of the AHCCCS patient.

nclusion

he clinic administrators want AHCCCS to work in the al areas. The Program is presently more widely ported than the County system, or explicitly for the administrator near the California border that dealt h both, than MediCal. However, one must remember t most of these administrators' expectations are low their clinics are not "at risk." For example, the level reimbursement is not the issue it is with established dicaid providers outside of Arizona. As the expecta- ns of the clinic administrators rise, the cooperation ween the Plans and these subcontractors will ilarly be required to increase. In assessing needs for hnical assistance, there was some variation by size of ic, with the larger "330" sites being more dissatisfied h the status quo and more articulate in terms of ining need. It also appears that, until now, the smaller ns have generally been more responsive in supplying hnical assistance than the larger Plans. Consideration ould be given at the State level to encouraging Plan ernatives which will incorporate the needs of rural patients and providers as a first, and not a last, priority, Plan alternatives which would tackle the problems of increased costs in rural health care delivery with unique organizational solutions.

Some of the implications of this evaluation have been enumerated below in resolution format. This format is being utilized by many groups at the moment while the AHCCCS program is in a major transition stage. Most of these resolutions are directed at the State and County Offices. Exhortations to improve the Program's administration at these levels, as noted previously, are shared by the rural clinics. In order to complement, and not duplicate, these resolutions, the following observations are offered to the Plans on behalf of the rural clinics. These resolutions are directed at improving the operation of AHCCCS at the subcontractor level, particularly to rural providers whose isolation precludes their making numerous and expensive long-distance phone calls and/or visits. The implementation of these resolutions should be closely monitored by the State as part and parcel of routine Contract compliance.

Resolved That

1. The Plans provide clear and concise documentation to the subcontractors explaining the reimbursement process and how the level of payment is calculated.
2. The Plans work with the subcontractors to develop a procedure for monitoring and cross-checking the reimbursement totals.
3. The Plans support the subcontractors with marketing materials which can be individualized.
4. The Plans make public their criteria for eligible subcontractors and then apply these criteria on an equal-opportunity basis.
5. The Plans provide a "Plan of Action" to the subcontractors explaining how they intend to carry out each of their AHCCCS responsibilities, e.g. EPSDT, emergency services, pharmacy services, dental services, grievances, and transportation.

Public Perceptions of AHCCCS and Estimates of Eligibility for Enrollment in Publicly-Funded Health Care Programs:

Results of Telephone Surveys in Metropolitan Tucson

Georgiana Boyer, M.D.
Ronald E. Pust, M.D.

Abstract

Two weeks before the Arizona Health Care Cost Containment System was implemented, only 19% of people interviewed in a telephone survey in Pima County had heard of the program. Six percent of the sample population were at that time utilizing the county-supported indigent health care system; although 11.2% said they were eligible for county care. When a repeat survey was done eight months after AHCCCS began, awareness of AHCCCS had risen to 58% in a sample from the same population. Eight and one half percent of those interviewed were enrolled in the new AHCCCS program. Respondents' opinions of the AHCCCS program were clearly more favorable than unfavorable, despite the negative commentary then current in the daily media.

The principal population surveyed was selected because it was of diverse ethnic composition and contained a significant number of lower socioeconomic families. On the basis of income and family size data, we estimated that, within that population, at least half again as many families as were then enrolled might be eligible under the existing AHCCCS guidelines. We also found that there was still a larger group with total annual family earnings of less than $8,100, many of whom lack health insurance; the so called "notch group." Decreasing the number of Arizona's eligible in order to cut AHCCCS program costs will inevitably increase the already large number of medically underserved.

Introduction

This report summarizes some of the results obtained in two telephone surveys in the greater Tucson area; the first of which was conducted in September 1982, two weeks prior to the beginning of the AHCCCS program, and the second in May 1983, eight months after its start. The surveys were designed to collect data on health care utilization, particularly among members of lower socioeconomic groups, to gauge public awareness and opinions of the AHCCCS program, and to estimate how effective the new program had been in reaching and enrolling eligible clients.

In order to estimate to what extent the AHCC
program might be expected to cover the health c
needs of the poor, we sought to determine the numb
in the sample who were eligible for AHCCCS relative
the number in the "notch group," whose incomes
low but not low enough to qualify for AHCC
coverage.

Methods

Survey Content

Both surveys contained questions on demograp
characteristics such as sex, age, ethnic group, mari
status, employment status, income, and family si
Information was also gathered on the type of facil
respondents went to for health care, how they got the
how they paid for health care, whether they we
enrolled in government-supported health care p
grams, and whether they received assistance from oth
welfare programs such as food stamps or Aid
Dependent Children. During the first survey, which
done two weeks prior to the date, AHCCCS officia
began; interviewers asked respondents if they h
heard of the new health care program called AHCC
In the second survey, which was done eight mon
later, the questions on AHCCCS were more extensi
they included what respondents had heard ab
AHCCCS, whether what they heard was good or bad
both, where they had learned of AHCCCS, their o
opinions of the program, whether they were enrolle
it or thought they might be eligible for it, and wheth
they thought the doctor providers were paid on a fee
service basis or a yearly capitation basis.

The first survey consisted of between 22 and
questions; the second varied from 13 to 28. Interview
did not ask all questions of all respondents because
the branching nature of many questions. In the seco
survey an attempt was made to define better t
respondents who were potentially eligible for AHCC
as well as those who could be classified as "no
group." Each survey respondent was asked if his t
family income exceeded $675.00 per month. If t
income was less than that figure, the respondent
asked the number in the family living at home a
dependent on that income. The interviewer, who h
before her the income guidelines for each family size

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ICCCS eligibility, then asked if the respondent's come was more or less than the figure which rresponded to the maximal allowable income level for ICCCS eligibility for a family of the respondent's size. is procedure was admittedly far less thorough than e formal eligibility determination process used by the unty, but it permitted the establishment of proximate limits for the relative numbers of AHCCCS- gible and ineligible among low income families.

rvey Pre-testing and Interviewer Training

The surveys were written in both English and Spanish, e-tested on a subsample, and modified. Each bilingual ephone interviewer was specifically trained and then l her own pre-testing and trial telephone interviews; al modifications were then made in the survey trument. At the beginning of each interview, rveyors offered the respondent a choice of English or anish for the conduct of the interview. Each com- eted interview required ten to fifteen minutes.

mpling and Survey Population Choice

The technique of random digit dialing was used.[1] A ographic area of metropolitan Tucson was selected ich contained a cross section of income and ethnic oups and included a substantial proportion of lower cioeconomic families. In consultation with telephone mpany representatives, five 3-digit prefixes were ected, which served a population of approximately 000 subscribers in the target area. Lists of computer- nerated random sets of four digits were used by the erviewers in conjunction with the five 3-digit prefixes. is procedure ensured random selection of interview ojects within the population defined by the prefixes. r the second survey the same five prefixes were used th newly generated lists of four digits. The survey mple thus came from the same population (referred to Population A below). In addition, for the second rvey we chose for comparative purposes three new efixes which served approximately 30,000 customers a middle and upper income area of greater Tucson opulation B).

As a consequence of the use of randomly selected gits, some of the numbers dialed (19.7%) were either t assigned or had been disconnected; others (8.2%) longed to commercial enterprises; still other calls .4%) were unanswered. Of appropriate calls, i.e. to idences answered by appropriate respondents, 45% ulted in completed surveys. Fifty-five percent of tential respondents declined the interview.

For the first survey, 240 interviews were completed m Population A. For the second, 461 interviews were mpleted from Population A, and 146 from the higher come comparison group, Population B. In the second rvey the 461 interviews were done in two time blocks. o hundred forty-six were done between 9:00 a.m. and 0 p.m. on weekdays; the remaining 215 were done tween 6:00 and 9:00 p.m. weekdays and on Saturdays. is procedure was followed because we were ncerned that survey results obtained during the rkday might reflect a nonworking population and that different replies might be obtained when those who worked by day were at home to answer the telephone. When the results were analyzed, few significant differences were found between daytime and evening-weekend respondents. Where differences did appear they are noted in the results section; otherwise the day and evening respondents are combined.

Results

1. *Demographic Characteristics of Survey Populations*

The survey data in Table 1 support the study's expectations regarding the socioeconomic and ethnic status of Populations A and B. Only 57.7% of Population A respondents had total family incomes in excess of $8,100 per year. Over ninety percent of Population B were earning above that level. The cultural diversity of Population A is apparent in Table 1. The age distribution of respondents from the two populations was similar, although Population B respondents had a slightly higher proportion over 65 years of age.

2. *Estimates of Eligibility for and Enrollment in Publicly Funded Health Care Programs*

Pre-AHCCCS Survey—September 1982

One of the objectives of the initial survey was to obtain baseline estimates of the relative number of persons then using the Pima County supported health system, compared to the number potentially eligible for it and for the AHCCCS program, which was soon to be initiated.

Of the 240 persons interviewed in the first survey, 11.2% said they were eligible for free care provided by the county, but only 6.3% were actually enrolled and using the county health care system. Thirty percent reported that they did not have medical insurance or other assistance in paying medical bills. Forty percent of the sample estimated that their net family incomes were $600 per month or less ($7,200 per year). Although reliable income figures are very difficult to ascertain by telephone interview, the data suggested that at least as many of the respondents interviewed could be considered "notch group" as were eligible for county-provided care.

Survey Eight Months after AHCCCS Implementation—May 1983

Of 461 persons interviewed from the same population as the pre-AHCCCS survey, 8.5% were enrolled in AHCCCS at the time of the second survey. This AHCCCS enrollment figure was not significantly different from the 6.3% enrolled in the Pima County health system eight and one half months previously. Twenty-two percent of the respondents interviewed in the second survey thought they might qualify for free care. Twenty-nine percent stated that they paid for medical care out of pocket (see Table 2). Of those families with total earnings of less than $675 per month, 56% were ineligible for AHCCCS and as many as 43% were possibly eligible. It was impossible to determine for the remainder. Of the entire sample of 461 people from Population A approximately 16% would probably qualify for AHCCCS (8.5% were enrolled) and an additional 21% would be categorized as poor but ineligible (notch group). Thus, in this sample only one half of those probably eligible for AHCCCS were enrolled. For each family enrolled in AHCCCS there were two or three in the notch group. In contrast, only one individual of 146 interviewed in Population B was eligible and enrolled for AHCCCS and 7.5% could be classified as notch group. Over 90% had incomes in excess of $8,100 per year.

3. *Characteristics of Notch Group and AHCCCS-Eligible Respondents, Their Health Care Utilization and Financing.*

From the survey data on Population A, an analysis was made of the demographic characteristics of the low income (less than $8,100 per year) respondents and compared to the data for the remainder of the sample. The findings are summarized in Tables 1 and 2. Within Population A, the AHCCCS-eligible group differed fro the remainder of the sample in that they had a somewh lower employment rate, more single individu (including divorced, separated and widowed), and higher proportion who were of Hispanic backgroun The notch group also had a lower employment rate ar fewer married individuals. Family sizes in the notc group tended to be smaller than in the AHCCCS-eligib group and the proportion of people 65 years of age ar over was greatest among the notch group. Fifty to six percent of respondents in the low income groups wh were *not* enrolled in AHCCCS lacked health insuranc In most respects, however, the low income famili resembled the rest of the sample. Even among tl AHCCCS-eligible, more than one-third of tl respondents were employed, and all age and ethn groups were represented. No "typical AHCCCS clien profile emerges.

Table 1
Demographic Characteristics of Survey Respondents, May 1983

Characteristic	**Population A**				**Population B**
	Entire Sample	**AHCCCS Enrollees**	**Probable AHCCCS Eligibles**	**"Notch Group"**	**Entire Sample**
Number	461	39	35	97	146
	%	%	%	%	%
Total Family Income					
> $8,100/yr.	57.7%	0	0	0	91%
Ethnic Group					
Anglo	49	28	40	51	92.5
Black	3.2	2.6	6	4.2	0.7
Hispanic	42.5	61.5	54.3	40.4	4.1
Other	5.5	5	—	4.2	2.8
Language Preference					
English	84.5	72	74	82.5	100
Spanish	15.5	28	26	17.5	0
Sex					
Female	72	85	77	74.5	73
Male	28	15	23	25.5	27
Marital Status					
Currently married	59.5	36	34	37	76
Single (including divorced, widowed, separated)	40.5	64	66	63	24
Number of Children Living at Home					
None	33.4	51	35.8	75	no data
1—2	30.8	20.7	34.3	14.4	no data
3—4	13.6	12.7	11.5	7	no data
5 or more	6.3	7.7	5.8	1	no data
Age: < 18	2.5	—	—	—	4
18—24	10.5	7.7	25.7	12.8	7.5
25—34	27	25.6	25.7	27	24
36—44	19.5	23	22.9	10.6	16
45—54	11.5	7.7	5.7	6.4	14.5
55—64	12	18	8.5	9.6	12
> 65	17	18	11.4	33	22

Table 2
Health Care Utilization and Financing

Characteristic	Population A				Population B
	Entire Sample	AHCCCS Enrollees	Probable AHCCCS Eligibles	"Notch Group"	
Number of Visits for Medical Care in Last 12 Months					
None	24.2%	20.4%	37%	23.7%	19.8%
1—2	27.3	15.4	23	25.8	28.1
3—5	22.3	25.7	23	24.7	18.5
6—10	12.2	18	8.5	17.6	19.9
10+	14	20.5	8.5	9.3	13.7
How do you usually pay for health care?					
Health insurance	40	—	14	17	60
Medicare	10.4	—	11	26	7.5
AHCCCS	8.5	100	—	—	0.7
Out of Pocket	29.1	—	60	51	18
Other (V.A., Indian Health Service, CHAMPUS, etc.)	12	—	14	6	13.8
Other forms of assistance					
Food stamps	8.5	48.7	40	8.3	2.1
Unemployment Compensation	4	7.7	11	9.3	0.7
Aid for Dependent Children	1.7	23	3	—	0.7
Disabled—SSI	1.2	10.3	—	1	—
Other welfare programs or assistance	0.6	5	3	—	1.3
None	84	38.5	54.3	81.4	95.2
Employment Status — current					
Respondent Employed	45	41	28.5	36	35
Respondent's spouse employed	63	21	16.7	33	59

Awareness of AHCCCS and Attitudes Toward the ogram

When the initial survey was conducted only 19% of the eople interviewed had heard of AHCCCS, despite the ct that the population interviewed (A) had a substantial oportion of persons who were qualified for the ogram and there had been numerous references to it the news media. Eight and one half months later vareness of AHCCCS in the same population had creased to 58%. (See Table 3). In contrast, only 37% of e more affluent population (B) interviewed at the me time had heard of AHCCCS.

Responses to other questions about the AHCCCS ogram, asked during the second survey of all respon- ents who stated that they were aware of the program's istence, are also shown. (Table 3). Population A, which ntained more AHCCCS-eligible clients, was more vare of the program, had heard more or paid more tention to what they heard about it, had more opinions n it, and were more likely to have a good opinion of HCCCS than the more affluent Population B. The most vorable opinions of the program came from those nrolled in it.

Respondents from both populations, however, expressed more positive than negative attitudes about AHCCCS. Very few (4%) of either group were aware of the capitated payment feature of AHCCCS.

Discussion

The positive perceptions of AHCCCS and the speed with which enrollment in AHCCCS had been implemented in the survey population were in contrast to news media coverage current at the time. During the eight months between the time of the first survey and the second, the percentage of respondents aware of the AHCCCS program had risen from less than twenty to almost sixty percent. A slightly higher percentage of people were enrolled in AHCCCS than had been enrolled for county care just prior to the beginning of AHCCCS.

It is of interest to compare the perceptions of the public with the impressions of the Arizona physicians who responded to a questionnaire seven months after the start of AHCCCS in a study co-sponsored by the Arizona Medical Association and the Arizona Department of Health Services.[2] Although opinions varied with medical specialty, of all physicians responding with an

Table 3
Public Perceptions of AHCCCS Eight Months After its Implementation

Question	Population A				Population B
	Entire Sample	AHCCCS Enrollees	Probable AHCCCS Eligibles	"Notch Group"	Entire Sample
Heard of AHCCCS?					
Yes	58%	100%	74.3%	57.7%	37%
In general, have the things you have heard about the ACCESS program been good or bad or both?					
	Percent of sample which had heard of ACCESS				
Good	39	53.8	31.4	37.5	19.6
Bad	12.2	5	8.6	14.3	15.7
Both	15.5	12.8	11.4	10.7	13.7
Don't know	33.3	25.6	23	37.5	51
What is your own overall opinion of the ACCESS program?					
Good	42	64	40	48.2	20.4
Bad	8	2.6	0	7.1	6.1
Both	5.2	7.7	11.4	3.6	6.1
No opinion	45	25.6	48.6	41.1	65.3
How or where did you first hear about the ACCESS program? (First 5 responses only)					
	Population A — entire sample				**Population B**
TV	21				33
Friends or Family	20				12.1
Newspaper	18				35
Clinic or hospital	13.5				0
Radio	11				7
Do you think ACCESS pays the doctors?					
For each visit a patient makes	5.5				—
By the year	3.5				—
Don't know	91				100

opinion of the AHCCCS program in general, 49% had a positive impression, 11% felt the program had "merit but was too radical" and 12% had a negative impression of the AHCCCS program. These responses refer only to question five of the survey, which inquired about the physician's "general impression of the AHCCCS program," but not to opinions of the gatekeeper concept, experiences with the AHCCCS administrator, reimbursement problems or the impact of cost containment efforts on the quality of medical care.

With the recent cost overruns and controversy surrounding responsibility for the program's financial difficulties, the impressions of public and physicians alike may have changed, although the program certainly had not enjoyed favorable comment in its first eight months when these surveys were made. There is in any case a need for continuing objective evaluation of the AHCCCS program and any potential alternatives to it for delivering health care to the indigent population and of containing cost while maintaining quality care. Contrary to what might be expected on the basis of media reports and the many problems encountered in implementing the AHCCCS experiment[4] (see AWN's article in this issue) our surveys revealed widespread public approv
of the AHCCCS program, particularly among those wh
needed it most. We also found a large notch grou
which needed care but was ineligible for AHCC
benefits. Recent decisions to lower the eligibility ceili
for AHCCCS enrollment in order to cut cost may sa
the experiment from foundering financially, but w
clearly increase the size of this already large unde
served group.

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HCCCS: Fallout on edical Education

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stract

xperiments with prepaid managed care such as zona's Health Care Cost Containment System HCCCS) are here to stay and challenge academic dical centers to prepare tomorrow's primary care ysicians, in the new role of gatekeepers, to manage lth resources in response to system demands as well individual patient care needs. The gatekeeper ysician must have clinical competency as a primary e physician plus additional skills to select and manage appropriate technologies to meet patients' more ecialized needs in the most efficient and economical y. Medical educators can best prepare gatekeeper ysicians by training which enhances interpersonal ient care abilities, promotes a thorough under-nding of the organizational and economic aspects of dical care, and develops cost-conscious and conser-ive patient management skills. Curriculum changes uired to accomplish these goals will be minimal and l, in fact, reaffirm long-standing beliefs with respect what a medical education should provide physicians-training.

However complex the growing pains associated with Arizona's Health Care Cost Containment System (AHCCCS), prepaid managed care is here to stay. Medical educators must recognize this and respond with innovative and flexible training programs to prepare tomorrow's physicians to function more effectively in the emerging corporate environment. It is not an exaggeration to say that a thorough knowledge of the health care system and cost-containment strategies related to patient care will become a survival skill for the current generation of medical students. Indeed, it has already been observed that it is precisely the "fee for service" mindset among physicians and hospitals in AHCCCS which has contributed to some of its cost-overrun difficulties.

At the heart of prepaid managed care, of which AHCCCS is a prime example, is the gatekeeper concept.[1,2] The effective gatekeeper physician must think in terms of *rationing* health care in order to limit expenditures for patients while at the same time assuring acceptable quality of care for those patients. Successful gatekeeping is the key to making prepaid managed care work—both for the patient as well as for the system. Only with permission from the gatekeeper can the patient gain access to other health services including referrals to specialists and hospitalization. The gatekeeper's goal is to control utilization of high cost services and technology by eliminating inappropriate specialty care, while seeing to it that the patient is cared for in a continuous and comprehensive manner. An understanding of the gatekeeper's role is important for all medical students and residents, but is of special interest to those preparing for the primary care disciplines such as family medicine. Within the context of the gatekeeper's role, the primary care physician becomes both clinical manager for the patient with an illness or a problem as well as resource manager for the system which has evolved a whole spectrum of medical technologies to respond to the patient's specific needs. The gatekeeper is called upon to ensure that the patient receives all necessary and appropriate health care (however difficult these terms are to define) *but not a dollar more.*

Medical educators can help foster an awareness and identity which will support a gatekeeper attitude and practice style among those preparing for careers in primary care and an appreciation of the significance of the gatekeeper role among those who will enter the specialty disciplines. No new educational technology or medical content will be necessary to better prepare tomorrow's physicians to function in prepaid, managed health care settings since, in many respects, the gatekeeper concept represents a return to traditional values associated with the physician-patient relationship and its central importance in the healing process. Only the system has changed as new policy initiatives have been put forth to control costs. In order to be responsive to the needs of tomorrow's physicians medical educators will need to address the complex ethical and

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philosophical issues posed by cost-containment and the rationing of health care. In the immediate future we should begin by paying special attention to developing curricula to increase knowledge and skills in several areas:

First, we must recognize that the basic element which contributes to building a productive and cost-effective relationship between patients and physicians is strong interviewing and interpersonal skills. For example, *history-taking* becomes an extremely important competency for gatekeepers. A thorough medical history, which includes assessment of the patient's psychosocial and economic support in addition to generating an accurate diagnosis will identify complex or potential problem patients and help determine which community and medical/technical resources are appropriate to the management of each. Counseling and patient education skills must also be strongly developed.[3] Emphasis should be placed on informing the patient of responsibilities and limits of the gatekeeper role and empathizing with the patient's own aspirations for health care. These "time-intensive" activities have heretofore been downgraded in our medical curricula instruction and emphasis on income-generating activities, procedures and referrals has proliferated. In prepaid managed care, however, the incentivies are altered and we anticipate that time spent in patient counseling and education efforts will pay for itself in terms of reduced reliance on higher cost procedure-oriented medical care.[4] Patient care skills will be as important, overall, as patient *curative* skills for the gatekeepers.[5]

Secondly, a solid understanding of the various health care organization and financing schemes in our pluralistic system is fundamental to students who will assume the gatekeeper role. For example, gatekeepers must be knowledgeable with respect to the reimbursement and incentive mechanisms in place to be allowed to maximize their rewards for cost containment. It is expected that the reality of overhead cost for staff, facilities and supplies will not go away as well as a perceived need by physicians to maintain a reasonable standard of living through salary and benefits, i.e., a reasonable profit should be made.

Thirdly, competent management skills involve assessing the patient's needs from clinical cost, and organizational perspectives. Gatekeeper medical education should instill cost-consciousness in all aspects of an individual's medical care including determination of revisit rates, ordering of ancillary procedures, choice of medications, and disposition of that patient. Gatekeepers must also be comfortable practicing a peer review style of medicine where their discussions are part of a feedback process to administrators and clinical colleagues. In this way *all* members of the health care team can review and comment on policies which will optimize quality, at least cost. Thus medical education programs should emphasize small group clinical decision-making and clinical cost-consciousness. Approaches to recognizing and dealing with role strain in relationships with medic specialists should be presented to better equip gat keepers to preserve continuity because it is fundamen to quality patient management.

Finally, medical training must better equip gatekee ers to understand and be comfortable with clini uncertainty—especially with respect to invasive tec nologies.

The skills and knowledge areas outlined above shou be introduced at the very beginning of the curriculu and reinforced in clinical clerkships and residenci Even where the label of gatekeeper is not utilized, the content areas are natural extensions of the recent atte tion to both cost consciousness and communi oriented primary care in the curriculum.[6-8] In particul courses in health care organization and communi oriented primary care would be mandatory compone of the preclinical curriculum with clinical decisio making exercises and case management problems bei required in the clinical years. The gatekeeper physicia must be clinically competent and secure in managi patients to optimize their care in a system which as them to husband limited resources more carefull Once these areas are accepted as being importa aspects of physician preparation, ethical and philosop cal questions surrounding the gatekeeper's role can addressed more effectively.

Whether the AHCCCS experiment itself survives, t model of prepaid managed care to defined populatio with a select cadre of gatekeeping physicians at t center will be a feature of health care delivery for t foreseeable future. In responding to this model, ac demic medicine will only be reaffirming what it alwa claims to have supported, namely that the physicia patient relationship is central to the caregiving proc and that quality health care is a team effort. Embraci principles as longstanding and worthy as these c surely contribute to making experiments such AHCCCS more successful.

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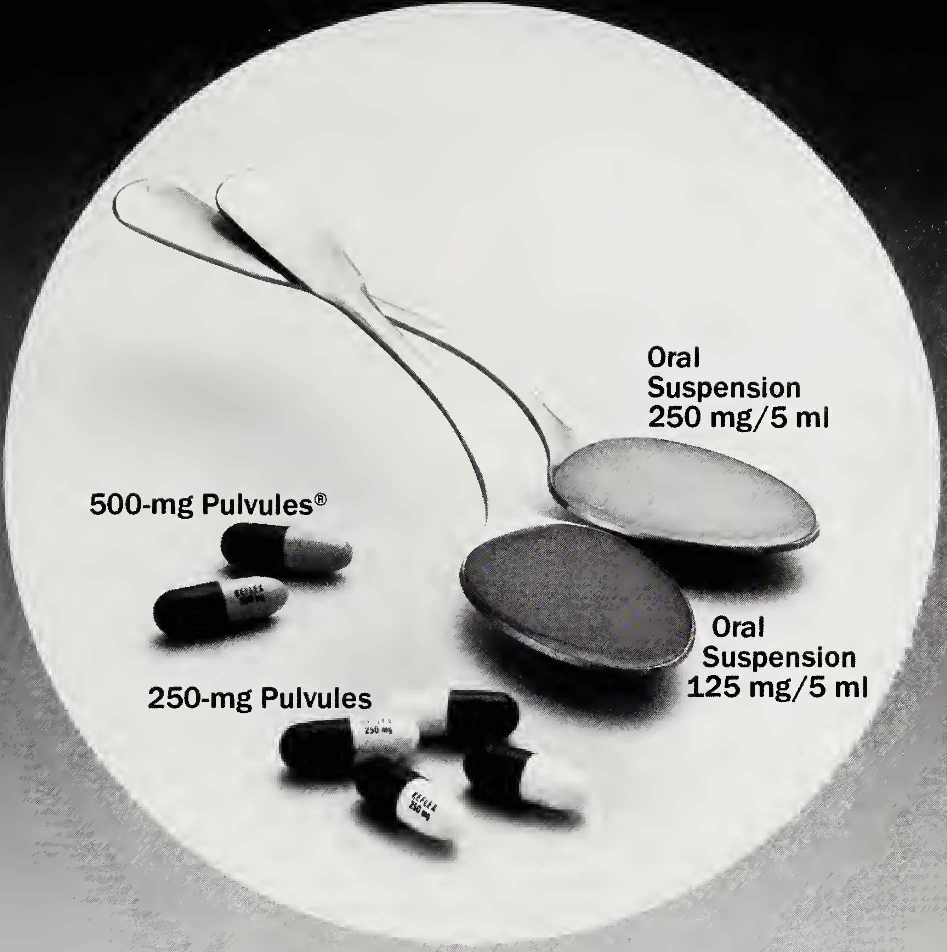

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Cardiology

Carotid Bruit and the Risk of Stroke in Coronary Bypass Surgery

Thomas O. Paul, Jr., M.D.
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The presence of an asymptomatic cervical bruit in a patient being considered for coronary artery bypass grafting represents a problem for many clinicians in regard to its proper evaluation and therapy. It is well recognized that approximately 50% of cervical bruits are caused by factors other than extracranial internal carotid artery stenosis. When carotid artery disease does in fact produce such a bruit only 20% of stenoses are hemodynamically significant.[1] Thus, the asymptomatic nonsurgical patient with a carotid bruit is usually followed for the development of transient ischemia in the carotid arterial distribution and evaluated if these symptoms appear.

If the same asymptomatic patient with a carotid ar
bruit is being considered for noncoronary elec
surgery, evaluation of the neck arteries by noninva
or angiographic means is frequently undertaken. Re
literature concerning cerebrovascular accidents
association with elective noncoronary surgery sugg
no increased incidents of stroke in patients
asymptomatic carotid bruit as compared to control
Indeed, a large prospective study by Ropper, et
reported 0.7% incidence of stroke among
unselected patients undergoing elective n
neurologic surgery; the prevalence of stroke am
patients with cervical bruits was found to be the sam
in patients without such bruits. Thus, the risk of str
with asymptomatic bruit and elective surgery may be
than the usually reported incidence of stroke associa
with carotid angiography and endarterectomy. It
however, recognized that those patients underg
invasive study and vascular surgery may be at higher
because of more extensive disease and the p
occurrence of transient ischemic cerebral attacks.
patient scheduled for aortocoronary artery bypass w
has an asymptomatic cervical bruit is often evalua
preoperatively by ultrasonic and/or angiograp
carotid studies. The rationale underlying such exten
preoperative evaluation is based on data which indica
that the two percent to five percent rate of p
operative stroke associated with coronary bypass is th
to seven times greater than that of elective noncoron
surgery. There is some literature which does not supp
the thesis that carotid arterial disease per se,
determined by the asymptomatic carotid br
predisposes the aortocoronary bypass patient to
increased incidence of perioperative stroke.[6-8] T
higher prevalence of neurologic deficit follow
coronary bypass grafting may be based on cereb
embolism from noncarotid artery sites, perioperat
hypotension and arrhythmias. Embolic sources incl
manipulation of the heart and great vessels w
dislodgement of atherosclerotic debris, cross-clamp
of the ascending aorta which may crush plaques a
calcification, and the pump oxygenator which may g
rise to platelet aggregates, lipid globules, air bubb
and frank clots. Although these potential sources
emboli may be operative in the genesis of perioperat
strokes, it has been difficult to designate each and ev
setting as the ultimate cause.

These considerations have provided two schools
thought on the approach to patients scheduled f
aortocoronary bypass surgery who are discovered
have asymptomatic carotid arterial bruits. Sor
cardiovascular surgeons disregard the asymptoma
bruit altogether and proceed directly to the bypa
procedure. Other clinicians investigate the carot
arteries by means of sophisticated ultrasonic technics
digital venous angiography, which are relative
innocuous. Should these methods indicate maj
obstruction or an ulcerated plaque, then the decisi
for performing both carotid artery and coronary arte

From: The Institute for Cardiovascular Diseases, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona 85006. Reprint requests to Alberto Benchimol, M.D., Good Samaritan Medical Center, P. O. Box 2989, Phoenix, Arizona 85062. Supported in part by the E. Nichols Memorial Fund and the Institute for Cardiovascular Disease, Phoenix, Arizona.

ery must be jointly decided by the patient and his sicians. There is no easy solution to this problem ause the penultimate study for its resolution has not n performed. In order to shed light on the subject, a e group of patients scheduled for aortocoronary ass surgery with asymptomatic carotid arterial bruits ıld necessarily be submitted for prospective estigation. All such subjects would undergo iographic studies of their carotid arteries. Patients ı similar degrees of carotid arterial involvement ıld be randomly allocated to "carotid surgery" or carotid surgery" and the incidence of both short- n and long-term cerebrovascular events tabulated. such a fashion some reasonable approach to the blem could be formulated. As yet, no study has sfied the stringent criteria outlined above. Until this e of investigation has been performed, the definitive roach to a patient undergoing aortocoronary bypass has an asymptomatic carotid arterial bruit remains a ntific enigma.

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AM *Gastroenterology*

Nd-YAG: Current Gastroenterologic Applications

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Editors:
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Laser, an acronym for Light Amplification by Stimulated Emission of Radiation, is a phenomenon which occurs when a substance stimulated to a high energy state emits light upon its return to a basal energy level. Characteristics of laser light include monochromaticity, parallelism, high intensity, and ability to be readily focused. The Nd-YAG laser (Neodymium-yttrium-aluminum-garnet = artificial diamond) and, to a lesser extent, the argon laser, have recently been adapted for gastroenterologic use. Such uses include application to stop acute and chronic bleeding, the palliation of obstructing gastrointestinal cancers, and the ablation of superficial neoplasms.[1]

From: Section of Therapeutic Endoscopy, The Mason Clinic, Seattle, Washington, and Phoenix Veterans Administration Medical Center, Phoenix, Arizona. Reprint requests to Richard Kozarek, M.D., The Mason Clinic, 1100 Ninth Avenue, P. O. Box 900, Seattle, Washington 98111-0900. Paper was presented to American College of Physicians Meeting, Tucson, Arizona, November 1983.

Materials and Methods

Twenty-six patients at the Phoenix Veterans Administration Medical Center and Virginia Mason Hospital, Seattle, Washington, who underwent 69 treatments with the Nd-YAG laser are reported. Indications included acute gastrointestinal bleeding in 15 patients. (Table 1). The source of bleeding was ulceration in ten (duodenal ulcer eight, gastric ulcer one, marginal ulcer one), Mallory-Weiss tear in two, Mallory-Weiss tear and gastritis in one, esophagitis in one, and vascular malformation of the stomach in one. Mean transfusion requirements were 8.0 units with a range from 0 (patient a Jehovah's witness) to 22. Eight patients underwent a total of 26 laser treatments for chronic upper GI bleeding. (Table 2). Mean transfusion requirement ranged from a low of .5 units per week to a high of six units per week in the month immediately preceding therapy. The etiology of the bleeding site was hereditary hemorrhagic telangiectasias in three, esophageal carcinoma in three, colon cancer in one, and gastric angiodysplasia in one. Seven patients underwent 23 laser treatments for neoplasm including four of those lasered for chronic bleeding. (Table 3). Other indications included bleeding plus obstruction in two and obstruction alone in one. Lesions treated included esophageal carcinoma in three, carcinoma of gastroesophageal junction in one, gastric carcinoma in one, gastric adenomatous and hyperplastic polyps in one, and colon malignancy in one.

Table 1
Acute Bleeding

Etiology:	Ulcer	10
	Mallory-Weiss	2
	Mallory-Weiss plus gastritis	1
	Esophagitis	1
	Gastric angiodysplasia	1
		15
Successful:	15/15 (100%)	
Rebleed:	5/15 (33%)	
Mortality*:	4/15 (27%)	

*Bleeding 1, hepatoma 1, pulmonary embolus 1, pneumonitis 1

Equipment used was either the MBB MediLas or Molectron Nd-YAG laser. (Figure 1). The laser beam itself was directed down a quartz fiber inserted through the biopsy channel for a specially adapted Olympus 1T or 2T upper endoscope or the Olympus LB-3 colonscope. Carbon dioxide was used to blow blood and debris from any bleeding site with the MBB laser while air was used for the Molectron laser. In general, powers between 50 to 70 watts were used in 0.5 to 1-second pulses to effect hemostasis whereas powers in excess of 80 watts were used in 1 to 5-second pulses for tissue vaporization.

Table 2
Chronic Bleeding

Etiology:	HHT	3
	Esophageal cancer	3
	Colon cancer	1
	Gastric angiodysplasia	1
		8
Successful:	6/8 (75%)	
Mortality*:	3/8 (38%)	

*Colon cancer, esophageal cancer, myelogenous leukemia/sepsis.

Table 3
Neoplasm

Etiology:	Esophageal cancer	3
	GE junction cancer	1
	Gastric cancer	1
	Gastric polyps	1
	Colon cancer	1
		7
Successful:	Bleeding	4/4
	Bleeding/obstruction	2/2
	Obstruction	1/1
		(100%)7/7

Results

Acute Bleeding

Laser treatment was successful in all 15 patients w acute bleeding. Five of 15 patients (33%) including f with bleeding ulcers and one with Mallory-Weiss t rebled within 72 hours. (Figure 2). All five rebleed were retreated with laser and four of five (80%) could stopped. Four patients (33%), all with visible vessels ulcer craters, went to surgery, two electively and t emergently. One of these patients was noted to hav transmural burn at time of surgery. Mortality was fou 15 (27%) including two of the operated patients. Cau of death included pulmonary embolus in one, bleed in one, hepatoma in one, and pneumonitis-sepsis one.

Chronic Bleeding

Laser treatment was successful in eliminating the ne for transfusion in six of eight patients (75%). It v unsuccessful in decreasing the need for transfusions two patients with hereditary hemorrhagic telangiecta Three of eight patients (38%) died—acute myelogen leukemia with sepsis in one, colon cancer in one, a esophageal cancer in one.

Neoplasm

All patients treated for bleeding neoplasm could controlled with periodic laser treatment (mean tc treatments 3.1, range 1 to 6). Two patients w ructing esophageal lesions had tumor vaporization pen the esophageal lumen from 2 mm and 6 mm to nm and 15 mm, respectively. A single patient with erficial gastric adenocarcinoma plus metastatic amous cell lung cancer had eight courses of laser tment. Biopsies of the laser site remain negative for ignancy at 11 months post-therapy. The patient with orhydria plus gastric polyps had recurrence of these ps at six months follow-up. Previous electrosection uch lesions was also associated with recurrence.

cussion

resently, three types of lasers are available in the ted States.[2] The properties of each are determined narily by the wavelength of the light emitted. The on dioxide (CO_2) laser has a wavelength of 10.6-mm is associated with superficial tissue absorption. It was ased by the FDA in 1976 for use as a surgical scalpel. argon laser also has been approved by the FDA. ing a wavelength of .44-mm to .52-mm and emitting ue-green light, it has a power range between one ten watts. It has been used to control GI hemorrhage oth animal and human trials[3-5] but is most commonly d in ophthalmologic practice for the treatment of etic retinopathy. The Nd-YAG laser, penetrating e to five times more deeply than the argon laser, has avelength of 1.06-mm. Like other lasers, its effect is endent upon tissue absorption of light with its sequent conversion to thermal energy.[6] Tem- atures between 60°C to 100°C cause char or gulation whereas those in excess of 100°C are ciated with vaporization. Despite the fact that it has n released by the FDA only for gastrointestinal use thus remains an investigational device in many ings, it is being used medically in a number of ations. These include the palliative treatment of ignant airway obstruction, skin tumor and tattoo ation, and the palliation and cure of bladder or tral nervous system tumors.[2-7]

ith the advent of the quartz transmission fiber, the YAG laser was first used for acute upper GI norrhage in Germany in 1975[8] and by Dwyer in the ted States in 1976.[9] Since then, a considerable body nowledge has been accumulated regarding its use in e bleeding.[1] Hemostatic effects depend not only n power setting and total energy delivered but also n the distance of the laser fiber from the lesion and number and duration of pulses delivered. Additional ables include spot size, energy and power density, r divergence angle, and gas (CO_2 or air) flow rate d to clear bleeding.[5] Lesions treated have most nmonly been in the esophagus, stomach, or duoden and include bleeding ulcers or gastroesophagitis. lory-Weiss tear, esophagogastric varices, and both plasms and vascular lesions of the upper or lower GI t have also been treated. Because 70% to 80% of such ons may stop spontaneously,[10] the 90%+ success rate ed with laser therapy has to be placed into spective.[1] Rebleeding after laser also can occur and can range from 7% to as high as 55% in the setting of a visible artery.[1] Neither the morbidity nor mortality in patients with massive GI hemorrhage has been consistently improved with laser therapy although anecdotal reports abound. A recent prospective controlled trial confirms that bleeding, operative, and rebleeding rates all decreased after laser therapy. Mortality rates were unchanged, however.[11] This may be related to the fact that a large percentage of patients with GI hemorrhage actually die of concomitant diseases.[10] As a case in point, only one of our patient deaths was directly attributable to such bleeding.

Not only is the laser useful in stopping acute bleeding, it also has been used to stop chronic bleeding in a number of situations. These include hereditary telangiectasis (HHT) in which the prophylactic treatment of esophagogastroduodenal telangiectasias has been shown to decrease both hospitalization for GI bleeding and transfusion requirements.[12] Similar claims have been made for gastric or colon angiodysplasia which may bleed either acutely or chronically.[1] Two of four patients with vascular lesions were successfully treated in this study. In addition, anecdotal reports suggest that laser treatment may be successful in chronically bleeding colonic, gastric, or esophageal neoplasms.[13] All four patients with bleeding tumors in this series had their bleeding controlled.

Used for neoplasm, the Nd-YAG laser can control either active or recurrent bleeding or can be used to palliate an obstructing lesion. It has been used particularly in the setting of recurrent or nonresectable esophageal carcinoma where tumor vaporization is associated with subsequent increase in lumen size.[14] This treatment obviates recurrent bougienage or stenting and allows the patient to swallow saliva and soft foods. A recent paper by Mellow, et al. suggests that improved survival may follow such treatment[15] but larger and better controlled trials will be required for a definitive answer.

Other neoplasms treated to date include obstructing gastric and colonic lesions in high risk operative patients. Additionally, recent Japanese data suggest that such therapy can actually eradicate superficial gastric malignancy.[16,17] Although the single patient with such a lesion in this series is biopsy negative for cancer after eight treatment sessions, "cure" will require final pathologic analysis.

Both benign gastric and colon polyps have also been treated with laser therapy.[13,18] Despite efficacy, the disadvantage of such treatment is that the entire specimen is not available for histologic section. Malignancy in such an apparently benign lesion often leads to radical changes in therapy. One patient with achlorhydria and recurrent gastric polyps was treated in our series.

Risks unique to laser therapy include a 40% to 80% incidence of transmural injury of the bowel wall with the Nd-YAG laser.[5] This can be associated with postlaser chest and abdominal discomfort in approximately one-third of treated patients, a phenomenon noted acutely in this series. In addition, a one percent perforation rate has been associated with such burns in some studies.[1] Air embolism or gas bloat, both related to gas infusion to clear bleeding sites, also can be seen as can smoke inhalation or internal explosions or fires.[5] The latter, related to tissue vaporization, are rare and can be partially avoided by use of a special suction setup. Finally, because laser light can be reflected and cause permanent retinal damage, special goggles which filter out the YAG wavelength are required by all personnel in the room.

Although exciting and clearly a therapeutic advance in a number of the above-mentioned settings, the significant instrument cost (approximately $100,000) will probably limit its use. A series of controlled trials randomizing the laser against more conventional treatment modalities should be undertaken prior to widespread application.

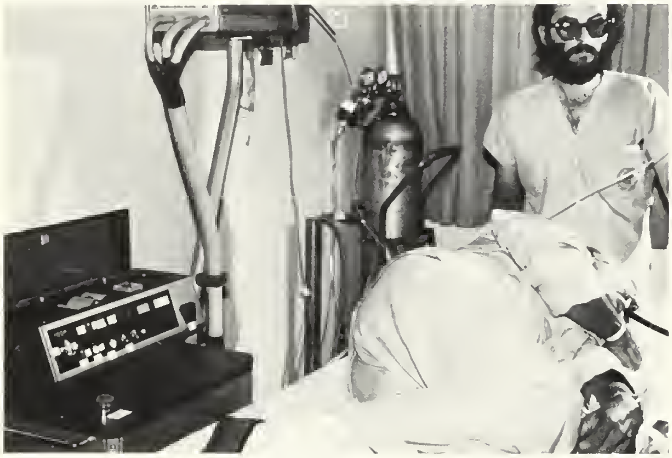

Figure 1
MBB MediLas Nd-YAG laser (left). Note CO_2 container, water intake and outflow valves (cooling system) and quartz fiber (arrows) that can be placed through endoscope. Protective goggles are required to filter out wavelength of laser light.

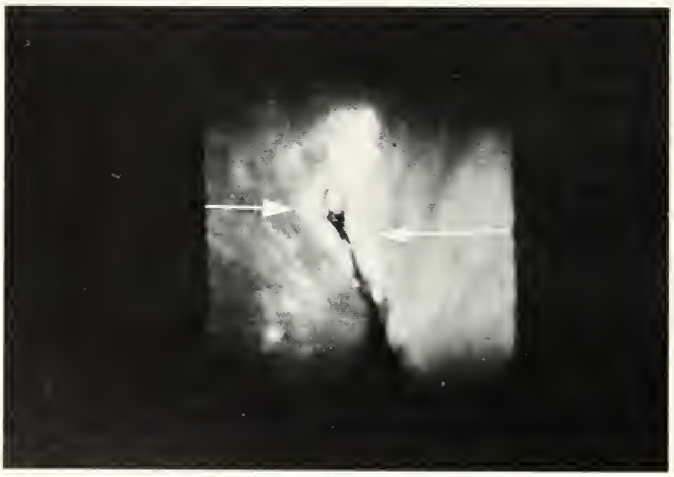

Figure 2
Treated Mallory-Weiss tear. Note laser-induced coagulum around margin of lesion (arrows).

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Industrial
Medicine

actical Pointers for ysicians Who Treat dustrial Patients

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an effort to assist physicians in understanding the
tical aspects of treating patients who may be eligible
eceive benefits under Arizona's Workers' Compen-
on Act, the members of the Medical/Legal Sub-
mittee of the Worker's Compensation Section of
Arizona State Bar Association have selected certain
cs considered to be of particular relevance and
ortance to physicians. These topics are discussed in the following articles which are designed to be informative and eliminate the confusion which often arises due to a lack of meaningful communication. Because these articles are not intended to be exhaustive treatises, and may not answer every question that arises, the committee invites anyone with questions concerning these articles to contact the members listed above for additional information.

Medical versus Legal Causation

Perhaps one of the knottiest problems faced by physicians and attorneys in their dealings with each other is the issue of medical versus legal causation. In this regard it is important to understand the functions of the physician and attorney in an adversary setting.

The primary function of the physician is that of diagnosis and treatment; the secondary function is to be able to present his findings and opinions before a legal tribunal in a complete and thorough manner so that the disability evaluation is understood by all parties involved in the hearing. The attorney's goal is to completely and thoroughly understand the medical disability, and then translate this into simple terms comprehensible to all persons involved in the legal hearing.

The problem with medical versus legal causation arises because the background and training of the two disciplines is totally different. Medical causality is based on scientific proof and must be recognized as such. Legal causality requires probability of over fifty percent, or "more likely than not." In the Workers' Compensation context, to be compensable, it is not necessary that the injury be *the* producing cause, but merely a cause of the impairment. The medical expert must understand and appreciate the degree of certainty required by the law, as the legal system recognizes the current inability of medical science to answer

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n: State Bar of Arizona, Workers' Compensation Section, Medi-
egal Subcommittee.

definitively and with absolute certainty, many of the medical questions presented in the patient's treatment, diagnosis and prognosis. Legal proof is not equated with scientific proof. For example, the physician may view aggravation (as defined subsequently) as small and minor or the inevitable and expected natural progression of the disease or injury being treated. However, in the legal context, the medically "small or minor aggravation" takes on greater meaning and can furnish the legal causation for the industrial injury. In terms of legal causation, the relevant inquiry is not how small the aggravation, but whether the disease or injury was hastened thereby and whether the end result occurred sooner than it would have otherwise.

The difference in medical and legal causation and the problems attendant thereto have been discussed in Arizona cases dealing with this problem in the Workers' Compensation context. One case gives the following example:

"Perhaps an illustration will help drive this ghost of Banquo from the table. Let us take a fifty year old man who has been walking all of his life on the brink of a precipice. He has walked close to the brink but he has kept his footing. Along comes someone who gives this man a push — not much of a push but just enough to make him lose his balance and plunge over the edge. It may not have been enough of a push to make a different person lose his balance. Medical cause would measure the force of the push and decide that the main reason for the plunge was the man was too near the brink. For legal cause it is enough to show that but for the push the man could have kept on walking for even one more step. In the latter case, the person who pushed the man must pay for all injuries resulting to him from his plunge." Selvidge versus American Airlines, Inc., *4 Ariz. App. 104, 417 P.2d 738 (1966).*

Another case attempted to differentiate between medical and legal causation thusly:

"By reason of his training, the doctor is thinking in terms of a single, precise cause for a particular condition. The law, however, endeavors to reach an inference of reasonable medical certainty, from a given event or sequence of events, and recognizes more than one cause for a particular injurious result. In the law of torts, it is said that the tortfeasor is not entitled to a perfect specimen upon which to inflict injury. Likewise, in the field of Workers' Compensation, the employer takes his employee as he is. In legal contemplation, if an injury, operating on an existing bodily condition or predisposition, produces a further injurious result, that result is caused by the injury." Selvidge, supra, citing Murray versus Industrial Commission, *87 Ariz. 190, 349 P 2d 627 (1965).*

Causation is further expanded in the medicolegal context by the addition of terms such as "preexisting condition," "exacerbation," "aggravation," "precipitation" and "acceleration." Physicians must realize that the industrial injury need not be the only cause of injury. Indeed, a phrase often found in Workers' Compensation cases and alluded to in the quotations above is that the employer takes the employee as he finds him, and if the industrial injury operates on an existing condition, weakness or disability to produce a further injurious result, the industrial injury legally causes that result.

"Exacerbation" is an increase in symptoms with no pathologic changes of a medical problem. The symptoms usually disappear within a few to several days. However, "aggravation" involves pathologic changes of a disease or injury process with an increase in symptoms and/or signs. Common examples of preexisting conditions in the orthopedic area are laminectomy, fusion, or developmental or congenital changes, such as osteoporosis, spondylolysis or spina bifida occulta. In a heart case the most glaring example of a preexisting condition is arteriosclerosis. In heart cases before the Industrial Commission, it has been determined that if it can be shown the industrial incident acted upon this preexisting condition and that the industrial incident was a "substantial contributing cause" to the heart attack, it will be compensable.

"Precipitate" in the medical context means the onset of disease or a traumatic process by whatever cause. "Accelerate," of course, means to speed up the process. Many physicians believe that if a disease or condition would have eventually caused the patient's disability or incapacity due to the natural course of the disease, the industrial event which causes this disease or condition to become manifest is immaterial in the natural course of things. However, legally, this is not the case. In the legal context even though the injury did not medically cause a condition or disease but brought on the symptoms of an underlying disease earlier than would have been anticipated, legally, the injury was the proximate cause of the "medical condition," warranting the allowance of Workers' Compensation benefits.

Medically, causation is determined by the history and physical examination of the patient/claimant. The physician does not seek the same accuracy as the attorney in terms of onset, mechanism of injury, lifting incident related to weight, repetitive actions in producing back pain, etc. The doctor assumes the truthfulness of the patient's history. The purpose of the legal history is to cover the mechanism of the injury, acute, gradual onset, causation, aggravation, and the presence of preexisting conditions in terms of traumatic effect.

In conclusion, physicians and attorneys alike must realize that, even with the technical difference between medical and legal causation, they are not working at cross purposes. The physician's main concern should be the care and treatment of his patient, and the attorney's main concern should be identical to that of the physician, with the added concern of monetary recovery to his client where justified. Therefore, the two disciplines must work together in cooperation for the benefit of the patient/claimant.

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Occupational Medicine

tyrene:

Occupational Hazard

lliam D. Brown, Ph.D., M.D.

or:
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stract

tyrene is an important industrial compound widely ployed in plastics manufacturer, rubber manuturer, and fabrication of plastic products. Human posure to styrene is primarily occupational in nature. e current exposure standard for styrene is an eight ur averaged exposure of 100 parts per million (ppm), hough a 50 ppm level has been recommended. The icology of styrene is reviewed. Workers who are posed to styrene should have preplacement physical minations. Periodic examinations should also be formed, and biological monitoring and neurochological testing may be warranted in certain cumstances.

Key Words: Styrene, occupational medicine, organic emicals.

tyrene is an important intermediate in chemical thesis and a monomer for plastics manufacturer in zona. Styrene is also known as vinylbenzene or enylethylene. Although styrene monomer was covered in 1831, it was not until World War II that its oduction accelerated, due to the high demand for thetic rubber.

Styrene is produced commercially by the dehydrogenation of ethylbenzene, which in turn is produced by the reaction of benzene with ethylene in the presence of aluminum chloride. Because of its vinyl group, styrene is very reactive, and it polymerizes easily at room temperature. It is used in the production of plastics and resins [polystyrene resins, acrylo-nitrile-butadiene-styrene polymer (ABS), styrene-acrylonitrile copolymer (SAN) resins, styrene-butadiene copolymer resins, styrene-butadiene rubber (SBR)].

Styrene is a clear, colorless liquid with a characteristic pungent odor. The odor threshold for styrene vapor is about 0.05 parts per million or ppm. It is rather volatile (vapor pressure = mm Hg at 25°C); the vapor is heavier than air. It is also lighter than water. Air saturated with styrene is near the explosive point at 25°C; warmer temperatures may result in styrene concentrations within the explosive range.

Human Exposure

Human exposure to styrene is primarily occupational and occurs in the setting of styrene production operations and reinforced plastic manufacture. The exposure level greatly depends on the work conditions. Good engineering control can reduce exposure to a few ppm. During spills or machinery failure and during maintenance operations, levels in the hundreds of ppm may occur. The current recommended exposure limit (threshold limit value or TLV) for styrene is 50 ppm (time weighted average) with a ceiling value of 100 ppm. The Occupational Safety and Health Administration's (OSHA) standard, adopted in 1970, limits styrene exposure to 100 ppm for an eight hour workday, with a ceiling of 200 ppm for a 15 minute period. Recently, the National Institute for the Occupational Safety and Health (NIOSH) has recommended to the Occupational Safety and Health Administration that worker exposure be limited to a 50 ppm standard with a ceiling of 100 ppm for a 15 minute period.

Metabolism

Styrene's absorption, metabolism, and elimination from the body all have relevance in determining the limits for exposure to the substance. In 1977, exposure to 70 ppm to 206 ppm of styrene in volunteers resulted in 88.7% of the inspired styrene being absorbed, a figure higher than previously thought.[1] Absorption from the lungs depends on the rate of ventilation. Workers under heavy physical stress may have slightly higher blood levels of styrene. The amount of styrene absorbed through the skin is about two percent of the amount absorbed via the lungs; skin absorption of styrene vapors is of minor importance in the work environment.

The metabolism of styrene has been reviewed in detail.[2] Styrene is metabolized mainly in the liver. First it is oxidized to styrene oxide, an epoxide, by the microsomal monooxygenase system. Styrene oxide is biologically reactive and can bind covalently to cellular macromolecules. Styrene oxide is rapidly hydrolyzed to styrene glycol by microsomal epoxide hydratase. A glutathione conjugation reaction occurs also; the

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glutathione conjugate is excreted mainly in the bile. Styrene glycol is oxidized to mandelic acid and further to phenylglyoxylic acid, the two main urinary metabolites in man. (See Figure 1). The excretion of these acids is best measured after the end of a work shift.

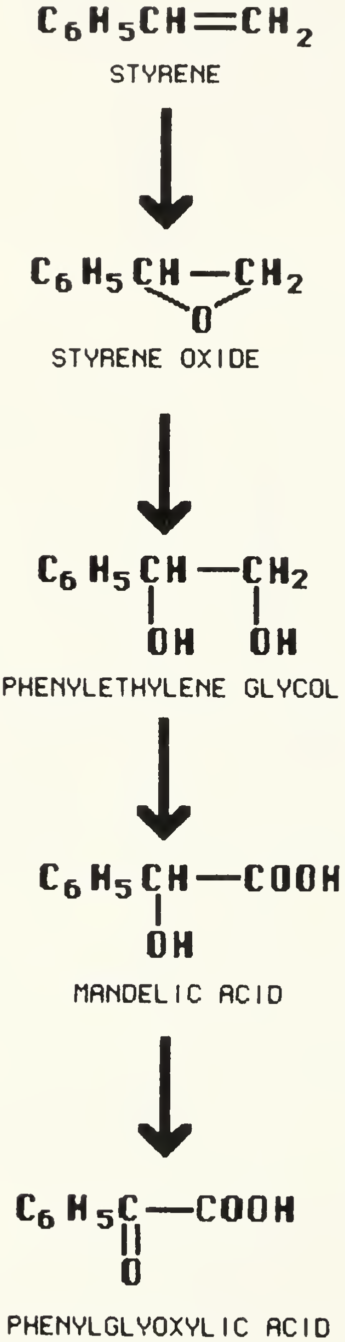

Figure 1
Styrene Metabolism in Man

Styrene metabolism can be affected by the preser of other substances. Phenobarbital enhances metabolism while toluene, which is known to oxidized by the hepatic microsomal enzyme syste reduces the metabolism of styrene. In addition, styre metabolism can be induced by styrene exposure.

Since mandelic acid and phenylglyoxylic acid are r normally found in urine, styrene exposure of one to f ppm over an eight hour shift can be detected. In man t ratio of the acids is 8.5-3:1.[3] The concentration mandelic acid in urine immediately after the worksh appears to be the most reliable exposure indicator from 50% to 85% of an absorbed styrene dose converted to mandelic acid. Based on post-worksh sampling, a point estimate for an eight ho occupational styrene exposure of 100 ppm is 3,000 mg mandelic acid per liter of urine.[4] This figure suggests tl if a worker's urine contains less than 2,000 mg/l mandelic acid, there is a 97.5% probability that he l been exposed to less than the Occupational Safety a Health Administration's standard for styrene of 100 pp Based upon the disappearance of mandelic acid in t urine, the biological half-life of styrene in man has be calculated to be between 5.9 and 9.7 hours. These figu indicate that a fraction of the mandelic ac concentration seen at the end of a workshift is due to t previous day's exposure. But when appropria percentages of prework mandelic acid concentratic are subtracted from postwork levels and then related exposure, the correlation between exposure a urinary mandelic acid levels is not improved. A mo important factor is that of urinary specific gravity, whi should be routinely adjusted to a predetermined valu A value of 1.024 has been suggested; at this lev exposure to 100 ppm for eight hours is indicated b point estimate of 1,655 mg/l of mandelic acid. It is a apparent that at the 100 ppm level bioaccumulation do occur, as urinary mandelic acid levels increase pr gressively throughout the work week.

Another approach is to measure the urina concentration of mandelic acid the morning af exposure, prior to beginning the workshift. Using t method, a table of next-morning mandelic acid lev versus eight hour exposure to various concentrations styrene can be constructed.[5] (See Figure 2).

Styrene is an example of a compound where t pharmacokinetic behavior in humans is similar to t

Next Morning Mandelic Acid (mg/g creatinine)	Exposure ppm
330	100
260	75
180	50
96	25

Figure 2
Next morning urinary mandelic acid concentrations and pr averaged 8-hour exposure.

mal species from which toxicity data has been rapolated to man. At concentrations of up to at least ppm, inhaled styrene is cleared from the body of both and humans in a manner that is consistent with a -compartment linear pharmacokinetic model.[6] No tinued accumulation of styrene would be expected occur during repeated, daily eight hour exposure to opm. At exposure levels above 200 ppm, when the arance capacity becomes saturated, the toxicological file of styrene in rats may not be justifiably rapolated to lower exposure levels in man.

icology

n animals, acute exposure to 5,000 ppm of styrene was formly fatal after several hours, apparently due to S depression.[7] Marked pulmonary lesions, including gestion, hemorrhage, and edema were observed at els as low as 1,300 ppm. Eye and nose irritation were ed at levels of 650 ppm. These animal studies are nsistent with reports of the acute effects in man. osures of 800 ppm immediately caused eye and nose tation, a persistent metallic taste, drowsiness, and pairment of equilibrium.[8] Styrene workers have cribed "styrene sickness" with such symptoms as usea, vomiting, anorexia, and general weakness.[9] ner reports have also described skin, eye and nose tation, tiredness, headache, and disturbances of ep, as well as changes in weight.

iquid styrene degreases the skin and can cause an tant dermatitis when contact is frequent. The allergic ect of styrene is slight, however, and positive ctions to styrene are seldom found.[10]

f styrene is accidentaly splashed into the eyes, derate hyperemia of the conjunctiva and slight injury the corneal epithelium can occur. These effects urn to normal within 48 hours.[11]

ronic Toxicological Studies

n animals, the long term organ system toxicity of rene was minimal over a period of six to twelve nths at several hundred to 1300 ppm in rats, rabbits, d rhesus monkeys.[6] In humans, epidemiological estigations have concentrated on hematological, urological, behavioral, and carcinogenic issues.

matologic. An etiologic relationship between rene butadiene rubber (SBR) exposure and the matologic malignancies, leukemia and lymphoma, s reported in 1976.[12] Results from this case control dy of leukemia and lymphoma among hourly paid bber workers from one company showed that cases re six times more likely than controls to have worked jobs in the SBR plant. There were five cases of matologic malignancy. A diversity of clinical disease de up this case group.

n January 1976, two men who had been employed at jacent SBR facilities in Port Neches, Texas, died of ukemia. On the basis of preliminary observations, the tional Institute for Occupational Safety and Health cided to conduct detailed environmental and idemiologic studies at these facilities to test the pothesis that employment in the SBR production industry was associated with an increased risk of leukemia or other hematologic or lymphatic malignancies. Styrene and butadiene were considered as the target chemicals for this study because they are the two major components of SBR. The study design was that of a historical prospective. Elevated standardized mortality ratios for categories pertaining to malignant neoplasms of the lymphatic and hematopoietic tissues were not statistically significant. Cases involving leukemia were examined on a case by case basis. Most of the employees involved in these cases started work before the end of December 1945, the time when the batch process was converted to continuous feed operations and war time production conditions were discontinued.

The mortality of SBR workers had previously been reported[17] in 6,678 male rubber workers observed between 1964 and 1973. The risk ratio for lymphatic and hematopoietic malignancies was 6.2 in the SBR plant. Other subsequent studies have reinforced the possibility of an association between exposure to SBR production and the development of lymphatic and hematopoietic malignancies.

The most recent study of SBR workers[14] is a cross-sectional study of 157 workers in a plant in operation since 1942. Exposure to styrene, butadiene, benzene, and toluene were quantified. All exposure levels were well below recommended standards. The highest mean styrene (13.67 ppm) and butadiene (20.03 ppm) concentrations were found in the tank farm area (where raw ingredients are unloaded). The eight tank farm workers had slightly lower levels of circulating erythrocytes, hemoglobin, platelets, and neutrophilis and slightly higher mean corpuscular red cell volumes and neutrophil band counts. The ultimate clinical course of these small differences is unknown.

In summary, with regard to hematopoietic toxicology, there seems to be an association between exposure to styrene-butadiene rubber and the development of malignant hematopoietic and lymphatic neoplasms. The strength of this association and the exact contribution made by styrene alone await further investigation.

Neurological-Behavioral. In recent years there have been several reports that volatile organic solvents may produce behavioral change. Styrene has been included on a list of solvents for which there is good evidence of behavioral effects.[15] Prenarcotic symptoms, light-headedness, dizziness, headache, nausea, loss of balance, and incoordination, have been reported in styrene exposed workers, and reductions in peroneal nerve conduction are not uncommon in certain studies.[16] The more convincing evidence for styrene has come from subjects exposed to high concentrations. A recent study conducted at a factory building Fiberglas boats included behavioral tests administered at the beginning and end of a shift for workers exposed to styrene.[17] The results were compared to a referent group not exposed to styrene. The time weighted average exposure to styrene over the nine hour shift was 92 ppm.

There were no significant differences between the groups in objective tests of performance. Styrene exposure was associated with subjective changes in physical and mental tiredness and in the feeling of general well-being during the day. In contrast to earlier studies on styrene, no change in reaction time was elucidated. This issue remains inconclusive. In a very recent study,[18] a neuropsychological test battery was administered to 50 workers exposed to styrene and to 50 controls, matched by sex, age, and intelligence as measured with a standard verbal intelligence test. A dose response relationship was demonstrated between the intensity of exposure (as assessed by next-morning urinary levels of mandelic acid and phenylglyoxylic acid) and performance on the test battery. Reaction times, logical memory, and visual-motor and visual-constructive abilities were significantly impaired at exposures greater than or equal to 50 ppm.

Mutagenicity

The primary metabolite of styrene, styrene oxide, has been found to be a potent mutagen in a number of test systems, with and without metabolic activation.[19] Several studies show that exposure to styrene in the reinforced plastics industry is associated with increased frequencies of chromosomal aberrations in peripheral lymphocytes. These positive results were primarily obtained among workers employed in processing unsaturated polyester resins in manual laminating jobs. Negative findings were reported among persons working in the production of styrene or polystyrene.[20] Most of these studies have methodological problems (small numbers, failure to examine effects of smoking, poor statistical analysis) and involved exposure to many other chemicals. The overall weight of evidence, however, favors an association between styrene exposure and subsequent increased rates of chromosomal damage in lymphocytes of exposed workers.

Because of styrene's mutagenic effects, interest has also been focused on its reproductive effects. A recent cross-sectional study of 67 female lamination workers did not reveal any significant differences in number of births, pregnancies, or spontaneous or induced abortions when compared to an age matched control group.[21]

Summary and Recommendations

Human exposure to styrene is primarily occupational in nature. Styrene is an irritant to mucous membranes and the eyes and a central nervous system depressant. Workers exposed to styrene show an appreciable incidence of prenarcotic symptoms. The irritant properties of styrene are usually sufficiently potent to protect workers against serious effects, but perception of the characteristic odor diminishes with continued exposure.

Workers who will be exposed to styrene should have preplacement medical examinations which include at least the following:

1. Comprehensive medical and work histories with special emphasis on the nervous system, eyes, skin, respiratory tract, and liver.

2. A physical examination with special emphasis the nervous system, eyes, skin, etc. Additional test (e.g. liver function studies) should be considered.

3. A judgment of the worker's ability to use posi and negative pressure respirators.

In workers exposed to styrene, measurement urinary mandelic acid may serve as a useful adjunct biological monitoring. Periodic medical examinati should be available at least annually to all work exposed to styrene at airborne concentrations at above the recommended standard. In addition, work who complain of or exhibit changes in mood or performance should be considered candidates neuropsychological testing. All workers and poten workers having medical disorders of the nervous respiratory systems or liver disease should be inform of the possibility of an increased risk of impairmen their health from styrene exposure.

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Psychiatric Disorders

xpectations
art 1:
rry

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or:
mas E. Bittker, M.D.

ach of us assumes or is assigned many different and nging roles: child, student, spouse, parent, friend, ployer, tenant, doctor, lawyer, minister, banker, and orth. For each of such identities and in every one of implied relationships, there are fairly well-defined l elaborate expectations. As a physician, for example, ave an idea of what to expect of myself and I have ne notion of what others expect of me. In either case expectations may be more or less reasonable or listic or they may be quite absurd.

he determining influence of expectations is more ecific, more concrete, more of a process, than our lier formula for the integration of the persona: the ee-sided vanity in which the middle mirror portrays individual as he is, while this wing shows how he ws himself and the other side reflects how he is seen others.

Among the offspring of expectations are hurriedness and trepidation. Hurry itself is a badly neglected cause of human illness and untimely death.

Notice our language. We are awakened by an *alarm* clock. One wears a wrist*watch*, as in "watch out." We go to work in *rush* hour traffic. To be early or idle is to *kill* time. Everything has to meet a *dead*line. We used to speak of the *quick* and the dead. Goodness, we are all members of the human *race*!

The double meaning of that word, race, is really sinister. The evidence is everywhere, in all fields of endeavor.

Management and labor agree on a piecework policy, pay based on volume and rapidity of production. Quality gives way to quantity. The merit of the craftsman or artisan is jerked outside himself. He has then no measure of his inherent worth, no grounds for individuality or self-esteem. A person, by default, may then seek authentication in macho bluster or in the constant soliciting of notice by the opposite sex; and these are adolescent regressions.

Rapid flashing of strobe lights is used to provoke experimental seizures. Such lighting is typical of cheap advertising and is as ubiquitous as the frenetic noise of commercial music. A sensitive or intelligent person had better not linger too long, watching the capping machines in a brewing or bottling company. Only a cretin might tolerate or learn to ignore the machine-gun bangings of the assembly line.

Communication suffers with production the constant pressures of hurry. Advertisers, weather reporters, newspersons scarcely pause for breath in their staccato presentations; the rat-a-tat-tat of a woodpecker. There is no time for punctuation or paragraphing. Computer folk boast that hundreds of thousands of "bytes" (mordant neologism) of information can be stored, sorted and retrieved at a moment's notice. Sound now travels faster than the speed of sound, and talking pictures are flashed almost instantaneously by satellite from any place on earth or from the moon or outer space.

We bemoan prolonged exposure to amplified music, with the predictable damage to hearing. What about the torrents of visual stimuli (television, movies, traffic, billboards, shopping centers) which impinge on our central nervous systems, repeatedly overloading the circuits?

Travel provides the deadliest example of all. Until the invention of engines, man never travelled faster than harnessed winds or horses could carry him. Enormous trains now run more miles in a minute than the fastest chariot or courier could in an hour. Aircraft reach supersonic speeds while an orbiting vehicle moves at twenty thousand miles per hour.

Speed is the final cause of ninety-nine percent of traffic fatalities: *res ipsa loquitur*. In a collision at no more than thirty miles per hour there would be only minor injuries and property damage. Yet when a person drives below the homicidal speed limit or slows to look

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for an address, he provokes the squawking outrage of all the cars behind him. How or what in the world could ever rationalize people's lemming plunge down to the New York subways?

There are occasions, of course, when hurry is necessary and intelligent; to get in out of the rain, for example. And there is the obvious difference between hurrying and feeling hurried. The feeling of hurry, even when sitting still, is discrete, unmistakable, and not just subsumed under the broad concept of anxiety.

For the individual, hurry is a learned response and partly necessary. One is trained by way of schedules for eating and sleeping and going to the toilet. One is conditioned like a Pavlovian dog to react to the bell or buzzer at school or the changing traffic light.

On my day off I went to the lake. The vacationers were there, with cameras and flowery shirts and prosperous tummies. I had not left behind my puritan working identity. So I couldn't get rid of that insistent little tugging, that rubber band: "Why are you wasting time when you could be catching up on the paper work or somehow improving yourself?" Almost as ritualistic as grace before meals is my wife's admonition. "We don't have to hurry."

At the end of a day's work or a journey, one's urgent craving is for something signal-like to slow us down. Unfortunately the handiest signal, the antidote to the feeling of hurry, is the so-called "downer": nicotine, alcohol, tranquilizers, barbiturates, opium derivatives. With regard to chemical dependencies the laws and programs are as overlapping as shuffling cards and ultimately just as random. They overlook the more fundamental problem, the tension and urgency of haste.

The physiological (psychosomatic) effects of hurry, and the thought and feeling of hurry, are quite apparent. Strain on the autonomic nervous system is disruptive throughout the organism: headaches, joint pains, ulcers and colitis, asthma, hypertension and cardiac irregularities, angina, insomnia, urinary frequency, painful menstruation, possibly some forms of Alzheimer's disease. Hurry has the effect of friction, uselessly and prematurely wearing out the mind and the various organs and systems of the body.

If you add the number of deaths due to speeding and those resulting indirectly from hurry, you will have accounted for a lot of the graves in the cemetery. And the melancholy epitaph on many a tombstone will be: He never had time to be a nice person; he never found time to enjoy himself.

For the race as a whole the problem is much more profound. No one understands and no one seems to be investigating our obsession with hurry, our compulsion to accelerate. Maybe we are dealing with some gloomy Darwinian imperative: Hurry up and die—to make room for a growing population. This is not as farfetched as it sounds. The most prolific or fecund species of insects and animals have the briefest life spans. They are the ones who dart and scurry about like lawyers in the courthouse or doctors on their rounds or reporters and bellhops and cocktail waitresses.

Or one might view the problem in reverse or existe tially. Mindful of our very limited life expectancy (V are becoming dead!) unconsciously we may feel that have to hurry to be productive and reproductive befo it is too late. In older cases of life-threatening diseas such as consumption, we recognized an upsurge creative and procreative interests as presage of relap

Is there therapy for the folly of needless haste and t stress of feeling hurried?

At this point a note of caution: Our ignorance of t reasons for hurry does not excuse our self-destructi persistence. (Patients negotiate: "I will not begin relinquish my vice or neurosis until you explain why a how I acquired it in the first place.")

Secondly, treatment as always depends on recogn tion of the individual's basic personality type. T aggressive, for example, (type A, ugh!) will have instin tively chosen such recreations as racing or racquet b or tennis or polo. It is a mistake to suppose that these a healthy outlets for aggression, lessening or diffusing On the contrary they keep the individual "in character reinforcing and perpetuating his aggressiveness. T aggressive would be well-advised to take up phot graphy or fishing or bird-watching or music appreci tion or travel; any avocation in which speed a competition are not the primary goals.

Let the passive-aggressive on the other hand enter a contest which might counteract his passivity. Let t hysteric in his spare time get off the stage and bask something besides personalized attention. The schizo loner would surely be smart to trade his stamp or co collection for square dance lessons.

Most of us (hypocrites) will admit to being perfectio ists. ("Is it so wrong to be considerate, conscientio punctual?") We got where we are by hurrying to fini our work on time. We have endured almost inhum stress. Endured? Poor dears! No; we are not victims. W subjected ourselves to unrelenting strain, measuring to the fancied expectations of others and our ov expectations of ourselves, in each of our different rol

Well, it takes a little honesty to acknowledge th stress is not really imposed on us by society in general by whatever profession. It takes a little wisdom to jud our motives for hurrying and always feeling hurrie (Avarice and a craving for material possessions? I do think so. I think greed is secondary or derivative. believe that most of us strive for success in a hopele struggle to rise above the middle class, to leave behi the commonplace.)

Anyway, it takes a little honesty and a little wisdom a a whole lot of willpower to slow down. We already ha a super-abundance of self-discipline. It is just a matter redirection. A key word or motto might be "intrepid One will set one's own pace and never mind the oth runners. Instead of living (and dying) with trepidati we will turn and kick the stuffing out of those dogs at o heels.

Surgery

egative Feelings About egative Appendectomy

arles L. Witte, M.D.

tor:
k A. Friedland, M.D.

Sitting in weekly surgical morbidity and mortality nference for the past several years, I have become ndful of repeated perfunctory recitations of negative parotomy for suspected acute appendicitis. Most of e patients are young adults, few have antecedent or existent ailments and as a general rule, they recover pidly from this iatrogenic insult without obvious quelae.

How does the presenter justify negative appen- ctomy? Allegedly the patient exhibited a "surgical domen" with peritoneal findings (localized nderness, involuntary muscle guarding and ebound" in the right lower quadrant) and operation s undertaken without delay to avert the dire mplication of perforation. Further, I am advised, a agnostic accuracy of only 80% in acute appendicitis is eal: lower than 80% implies lax, and higher too rigid erative criteria. Thus, 20% useless abdominal rusions are conveniently explained away despite lure of retrospective,[1] prospective[2] and survey[3] stud- to justify this practice.

I take no issue with prompt operation for overtly rforated appendicitis or for abdominal pain with ritoneal findings from ectopic pregnancy, omental torsion, tubo-ovarian abscess, Meckel's diverticulitis or analogous conditions requiring operation but mistakenly diagnosed preoperatively as appendicitis. Nor am I troubled by an occasional negative laparotomy where history is blurred or symptoms unduly protracted. Surely, debilitated or elderly patients with altered sensorium or concomitant illness, women in late stages of pregnancy, restless and crying children, individuals on high dose corticosteroids or those wrapped in body spicas tax the ingenuity of even the most conscientious surgeon. But why rush an otherwise healthy person to the operating room in the wee hours of the morning to find nothing? Commonly, nonsurgeons first assess the situation in a busy emergency room and after repeated, embarrassing examinations in unfamiliar surroundings, patient anxiety escalates. Is it any wonder that agitation and outcry later greet the surgeon's probing fingers and the outward manifestations of peritonitis become distorted or misinterpreted? In this setting the whole clinical picture may often be unclear — the patient is hungry, pain has come on suddenly or vomiting antedates its occurrence, abdominal examination is not quite convincing, white blood cell count is unexpectedly low ($<$9000 per cu. mm.) sometimes without a "left shift" or unusually high ($>$20,000 per cu. mm.) or the point of maximal tenderness displaced from McBurney's point. What is lost in delaying, and perhaps avoiding operation altogether, by withholding oral intake, rehydrating with intravenous fluid and reassessing the situation later that evening or the next morning, preferably in a quiet hospital room away from the din of the emergency department? The typical reply is that this approach needlessly exposes the patient to risk of perforation, widespread peritonitis and death. Yet a patient with early appendicitis, that is, within the first 12 to 18 hours, does not suddenly become moribund and die.[1-3] Pathologic processes are a continuum, not sudden leaps in prescribed time intervals. That's exactly why expectant management is standard for far more serious acute sigmoid colon diverticulitis (a condition not unlike appendicitis), penetrating duodenal ulcer, acute cholecystitis and a wide range of other potentially but not immediately life-threatening "acute abdomens." Although removal of a normal appendix is easy and the healthy generally tolerate negative appendectomy, my personal reservations and call for greater restraint are rooted in the timeless admonition of the illustrious John Hunter, "no surgeon should approach the victim of his operation without sacred dread and reluctance."[4]

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Evaluation of the Patient with Jaundice — 1984

Richard E. Sampliner, M.D.

Evaluation of the patient with jaundice has always posed a diagnostic challenge. A number of recent articles about the approach of the patient with jaundice highlights this ongoing problem.[1-7] The importance of distinguishing extrahepatic from intrahepatic obstruction is crucial yet often difficult due to the multiplicity of etiologic processes. Delay in recognizing extrahepatic obstruction may result in sepsis and death, whereas surgery performed in a patient with intrahepatic obstruction due to parenchymal liver disease may result in operative mortality. In the last decade, new techniques of diagnosis and therapy have been developed which have altered radically the evaluation of the patient with jaundice. The purpose of this article is to review these new developments and delineate their role in the evaluation and management of the jaundiced patient.

Jaundice can be recognized when the bilirubin reaches a level of approximately three milligrams percent or greater. Evaluation of the patient begins with a thorough history and physical examination. The history must include details on drug use, hepatitis exposure, symptoms of biliary colic, fever, chills, night sweats and weight loss. Physical examination should focus on the stigmata of chronic liver disease: spider telangiectasias, palmar erythema, Dupuytren's contractions, abdominal wall collateral vessels, hepatosplenomegaly and ascites. The history and physical examination may provide clues that lead to the rapid identification of the cause of jaundice.

Physicians have long relied upon blood tests evaluate the patient with jaundice. Liver blood tests ha been labeled as having an intrahepatic (parenchym "medical") versus an extrahepatic (obstructi "surgical") pattern; however, these tests often fail distinguish between intrahepatic and extrahepa jaundice. In a recent series of fifty patients with jaundi the mean serum alkaline phosphatase, aspart aminotransferase (AST, SGOT), and total bilirubin not differentiate the group with intrahepatic from t group with extrahepatic obstruction.[5] An alkali phosphatase that is more than three times the upp limit of normal is suggestive of extrahepatic obstructi and an aminotransferase that is more than ten f elevated suggests an intrahepatic problem, but li blood tests alone cannot with confidence identify t cause of jaundice in a given patient.

The criteria for hospital admission of the patient w jaundice need to be emphasized. A patient with fever complications of liver disease such as encephalopathy bleeding needs to be admitted. Furthermore, t patient who defies diagnosis after a brief outpatie evaluation requires admission to facilitate the diagnos evaluation. A potential risk faced by the jaundic patient is that ascending cholangitis will occur prior appropriate therapeutic intervention. Additional extrahepatic obstruction lasting for months can result secondary liver injury that in itself becomes a clinic problem. Such risks make timely evaluation of t patient essential.

Table 1
Causes of Intrahepatic Cholestasis

Drug Induced
Viral Hepatitis
Alcoholic Hepatitis
Hodgkin's Disease
Sepsis
Sarcoidosis
Primary Biliary Cirrhosis
Chronic Active Hepatitis
Postoperative Jaundice
Jaundice of Pregnancy
Benign Recurrent Cholestasis
Dubin—Johnson Syndrome

Before commencement of a workup to exclud extrahepatic obstruction, it is worthwhile to review th myriad of causes of intrahepatic obstruction. Table presents a partial list of the wide spectrum of causes intrahepatic obstruction. Clearly a prior diagnosis liver disease, recent therapy with a known cholestati agent, or a history of alcoholism will lead the physicia to entertain a specific diagnosis. In an era where co containment is becoming extremely important, a dire test to confirm the suspected diagnosis may be the ne appropriate step.

Table 2 lists a number of diagnostic modalities whic have been clinically applied over the last decade. Thi profusion of tests is available because diagnosti precision is essential for evaluating and appropriatel managing the patient. The clinical challenge is to choos an appropriate sequence of tests to make the correc diagnosis and initiate therapy with minimal risk, tim

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d expense to the patient. A number of tests which ere formerly utilized in evaluating the patient with undice are currently of limited value, including upper strointestinal series, hypotonic duodenography, liver leen scan and intravenous cholangiography.

Table 2
Diagnostic Tests to be Considered

Ultrasound (Real Time)
Computed Tomography
Nuclear Medicine Biliary Scan (HIDA)
Percutaneous Transhepatic Cholangiography
Endoscopic Retrograde Cholangiopancreatography

A good first imaging test in the jaundiced patient is the dominal ultrasound (US). It is generally available, latively inexpensive, noninvasive and safe, for it volves no radiation exposure or contrast material. owever, ultrasound is limited by the experience and liability of the interpreter, the obesity and intestinal s pattern of the patient, and the quality of ultrasound uipment available. The predictive value of ultrasound greatest in the obstructed patient in whom an larged biliary tree can be recognized.[4] Computed mography (CT) is another noninvasive imaging odality. It is more expensive than ultrasound and nploys radiation, but better delineates the pancreas d is not restricted by obesity or the intestinal gas ttern. The accuracy of computed tomography is mparable to that of ultrasound.[5] Both techniques are ficient in the recognition of common bile duct stones[9] d both will miss extrahepatic biliary obstruction in the sence of biliary tract dilatation. Obstructive jaundice the absence of duct dilatation can occur in as many as n percent of cases.[10]

Although nuclear medicine biliary imaging can be lpful in confirming the diagnosis of acute olecystitis, it is of little value in the differential agnosis of jaundice. Its predictive value is less than that US and CT.[4,5] The major shortfalls of nuclear biliary naging techniques are the inability to image the patient th extreme jaundice and the capability of recognizing nly complete extrahepatic obstruction.

Currently extrahepatic obstruction can be excluded nly by direct means. Visualization of the biliary tree by jection of radioopaque contrast dye will define the esence or absence as well as the location of struction and assist greatly in planning further ocedures and therapy. When there is clinical spicion of extrahepatic obstruction, a direct duct udy should be done regardless of findings by US or CT. ne timing of a duct study is important and should be nsidered a preoperative procedure. Because of gher risk in the presence of obstruction, a surgical am must be ready to intervene in a timely fashion in e event that a study demonstrates obstruction. A tient with extrahepatic obstruction should be treated th antibiotics covering gut flora prior to and after the procedure. In a patient with severe systemic disease or known liver disease, a direct duct study should be performed only when it is clinically feasible to intervene therapeutically. If surgery is the only therapeutic modality available, a critically ill patient who is not a candidate for surgery is therefore not a candidate for a direct duct study.

The most appropriate way to demonstrate the biliary tree in an individual patient is a function of the local availability of procedures, the local skills in performing the procedures and the next step that is contemplated. The advantages of percutaneous transhepatic cholangiography (PTC) are the demonstration of high lesions in the biliary tree which may not be adequately filled in a retrograde fashion and the ability to study patients who have surgically altered anatomy, i.e. a Billroth II anastomosis. The percutaneous route is successful in demonstrating dilated ducts more often than nondilated ducts.[11] As with many procedures, the published literature often indicates a very low complication rate, partially a result of the extensive experience of the author. When the overall experience with PTC is evaluated, however, there is a significant complication rate: three percent sepsis, four percent bleeding, two percent bile leak, and nearly one percent mortality.

The advantages of endoscopic retrograde cholangiopancreatography (ERCP) include the capability of demonstrating the pancreatic duct, visualizing and biopsing the ampulla, the ability to demonstrate the biliary tree when it is severely attenuated as in sclerosing cholangitis and the ability to more safely visualize the biliary tree in the presence of ascites and coagulopathy. The success rate in demonstrating bile ducts by ERCP is a function of the experience of the endoscopist.[12] The most common complications of ERCP are injection pancreatitis (one percent) and biliary sepsis (0.8 percent) with a 0.2 percent mortality rate.[12]

When extrahepatic obstruction has been documented, the traditional approach has been surgical intervention to relieve the obstruction. There are now two new therapeutic options available that do not involve surgery. One is the percutaneous placement of stents following a PTC. The other is the endoscopic retrograde placement of a stent. When successful, such stents can internally drain bile. Both of these procedures have significant complication rates—primarily sepsis. In the patient with a retained common bile duct stone after cholecystectomy or the elderly critically ill patient with a common duct stone, ERCP offers the opportunity of nonoperative sphincterotomy accomplished by electrocautery through the endoscope which can relieve extrahepatic obstruction. Endoscopic sphincterotomy now represents the procedure of choice in patients with common duct stone(s) following cholecystectomy.

The algorithm depicted in Figure 1 gives a guide to the approach of a patient with jaundice. Taking into account the specifics of an individual patient and the pitfalls of generalized approaches, this guide should help define the most appropriate path.

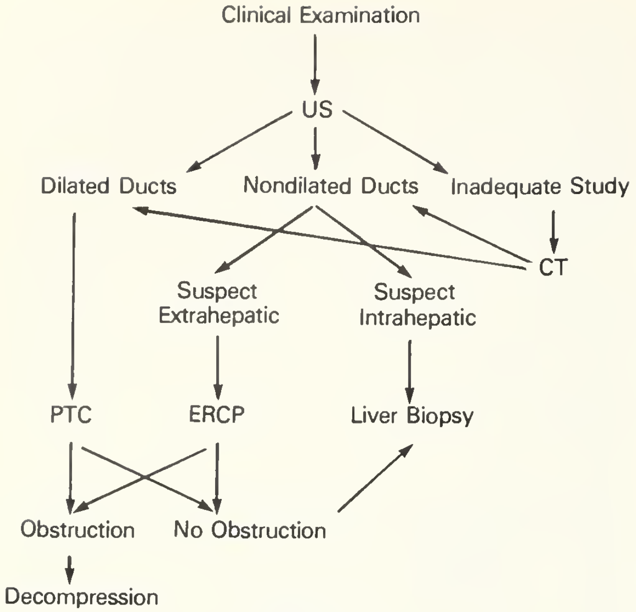

Figure 1
Sequential evaluation of the patient with jaundice

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The preceeding article, "Evaluation of the Patient with Jaundice—1984," is a reprint from May, 1984, due to an oversight which eliminated Figure 1.

Briefly Note

Murray M. DeArmond, M.D., Director of the University of Arizona Student Health Service, received the of A. Faculty Achievement Award at 15th Annual Awards Luncheon in Ma

Schuyler V. Hilts, M.D., Tucson, ha been named president of the Americ College of Nuclear Physicians.

W. James Howard, M.D., Phoenix, discussed Hypertension on the May *Health Highlights* Cable Television Program. **Drs. Donald E. Paxton,** Phoenix, and **James W. Steiner**, Scottsdale, were featured in the June presentation, Exercise and Weight Control. *Health Highlights*, co-sponsored by the Arizona Medical Association and SamCor's Video Services, can be seen on American Cable, Storer Cable, United Cable of Scottsdale and Western Cablevision.

Don Val Langston, M.D., Phoenix, was a guest speaker at the National Earthquake Conference held in St. Louis in June. Although the probabili of a significant earthquake in Southe California in the next several decades has been well documented, the high potential for earthquake activity in th Central Mississippi Valley is less well known, despite the fact that hundred of quakes occurred in this area from 1811-1812. Drawing upon his experience as Chief of Staff of Providence Hospital in Anchorage, Alaska, during the severe 1964 earthquake, Dr. Langston discussed th medical aspects of earthquake preparedness.

Reka V. Shah, M.D., Casa Grande, h been made a Diplomate of the American Board of Internal Medicine with the subspecialty of gastroenterology.

Arizona Medical Association members who have recently been elected to office in the Arizona Academy of Family Practice are: **John Kahle, M.D.**, Flagstaff, President; **Donald M. Mulvaney, M.D.**, Phoenix, President-elect; **Tom D. Powell, M.D.** Tempe, Vice-President; and **James M. Hurley**, Phoenix, AAFP Delegate.

Much of what the public knows about health and medicine is learned via TV. Telling medicine's story on *Healthbeat*, a health and medical information feature presented every Wednesday on the KTVK TV/Phoenix, 6:00 p.m. news were: **Edward Sattenspiel, M.D.**, Alcohol and Pregnancy; **George Brown, M.D.**, Ho to Take Medication; **Richard M. Ried**

)., Insomnia and Sleep Apnea, and n **M. Stein, M.D.**, What to Do While 're Waiting for the Paramedics.

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ecutive Committee of the ArMA Auxiliary, 1984-85 (left to ht) Jan Lisboa, immediate past president, Phoenix; Carolyn rrigan, delegate, Tucson; Mary Eleanor Holmes, president, y; Maureen Fisk, treasurer, Paradise Valley; Deborah nnson, recording secretary, Tucson; Florence Hendricks, ector, Prescott; Dee Sussman, 2nd vice president, Yuma; n Dew, 1st vice president, Tucson; Susan Cummins, esident-elect, Tucson

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Dr. Baker presents Dr. Robles' presidential portrait to Rachel Robles.

Dr. Baker and Dr. Robles at the awards dinner

s. Daniel Bright and her family receive the A.H. Robins' ysician Award for Community Service awarded post-mously to Dr. Bright.

50 year club honoree, Dr. Paul Singer with Dr. Baker

. Robert Phillips receives his 50 Year Club award from Dr. ker.

Dr. Earl J. Baker presents 50 Year Club award to Dr. John S. Baker (no relation).

Dr. Baker with 50 Year Club inductee, Dr. John C. Coglund

Arizona Medicine

Correspondence

Editor:

The handwriting is on the wall and on our letters. Even mail signed by our colleagues increasingly carries the salutation, "Dear Provider." The expectation is that before long we will be addressed as "Dear Gatekeeper," or perhaps "Dear Triagist." If they can't take the time to greet us by name, at least we should be addressed as "Dear Doctor." We are deprofessionalized and our stature is diminished by any other title. "Doctor" is what we are, and unless we permit otherwise, that is what we will always be. Perhaps we should return all this mail with the notation, "misdirected to Dr. X."

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Editorial

Cardiac Rehabilitation

Rehabilitation programs for post-myocardial infarction (Post-MI) and post-coronary artery bypass graft (Post-CABG) patients have experienced considerable change over the past thirty years. In the late 1950's and early 1960's, several "radical" clinicians in Israel and the United States prescribed rather aggressive therapy for post-MI patients by initiating an exercise program within one week of the infarction. Standard practice at that time was enforced bedrest for several weeks. Patients participating in this early exercise therapy program appeared to respond well, and many were back to work within four to six weeks. At approximately this same ti the National Aeronautics and Space Administration (NASA) was investigat the effects of bedrest on decrements physiological function, with bedrest used to simulate the state of weightlessness. Bedrest resulted in substantial reductions in cardiovascu function, with some decrements occurring rapidly, i.e., within a perio of hours. The results of the early ambulation/exercise programs in pos MI patients coupled with the information obtained from the NASA bedrest studies pointed to the importance of reducing the period o bedrest and the early initiation of physical activity in post-MI patients t minimize cardiovascular decondition and post-event complications.

In the 1980's, cardiac rehabilitation programs have become an important part of the treatment plan for post-M and post-CABG patients, but are also prescribed for post-transplant, hypertensive, and high risk for cardiovascular disease patients. While the exercise component represents t core of the program, a comprehensiv program will include stress reduction and substance-abuse therapy, and nutritional, emotional, social, vocational, and sexual counseling. Lik the program at the University of Arizona, most programs are compose of three or four phases. Phase I, an inpatient program, emphasizes education, support, and low-level exercise. Phase II, which is initiated upon discharge from the hospital following a low-level graded exercise test, involves outpatient education, emotional support, counseling in eac of the areas mentioned above, and a individually prescribed, medically supervised, and continuously monitored (ECG) progressive exercise program. Phase III is identical to Phas II with the exception that the patient removed from continuous monitorin and is spot monitored several times during each exercise session. A sign/symptom limited treadmill test t volitional fatigue is administered at th end of Phase II prior to entry into Phase III. This provides the basis for t exercise prescription in Phase III. Pha IV is a supervised program, but does not involve direct monitoring by a physician nor monitoring of the ECG. The duration of each phase is totally dependent on each individual patient progress, but will average seven to fourteen days in Phase I, two to six weeks in Phase II, eight to twelve weeks in Phase III, and six to twelve months or indefinitely in Phase IV.

As with any therapeutic interventio the cost/benefit ratio must be considered, and the efficacy of the

tment modality must be established.
ent costs will vary depending on the
ation and extent of the treatment
od, and the fee structure of the
vidual program. The total costs for
se I through III will generally
age between $1,000 and $1,200, and
usually reimbursed up to 80 percent
hird party carriers. In return, studies
now demonstrating a reduction in
length of stay in the hospital post-
nt, reduced morbidity and mortality,
arlier return to work, and an
roved quality of life associated with
essful completion of the
bilitation program. Early clinical
s were not encouraging, as there
little difference between exercising
non-exercising groups. Most of
e studies, however, were unable to
onstrate a training response,
cating that the patients were not
cising at sufficient intensity. Recent
ies have been more progressive,
g higher intensities of exercise, and
found rather remarkable
ovements in physiological function,
uding alterations in central
ilatory function, in addition to the
known peripheral changes. These
lts have been encouraging, and
altered the classical conservative
oach to rehabilitation of the post-
nd post-CABG patient. The
ence of this program at the
ersity of Arizona provides a unique
for education for many types of
iders, a fertile area for research
an important therapeutic modality.

H. Wilmore, Ph.D
tor
cise and Sport
nces Laboratory
rtment of Physical
ation and Surgery

on A. Ewy, M.D.

on of Cardiology
rtment of Internal Medicine

s J. Kettel, M.D.

ge of Medicine

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

BOARD OF DIRECTORS

A meeting of the Board of Directors of the Arizona Medical Association, Inc., was held in the Apache Room of the Scottsdale Conference Center and Resort Hotel, 7700 East McCormick Parkway, Scottsdale, Arizona on Saturday, April 28, 1984.

Committee Confirmations

It was moved and carried to confirm the following Committee Appointments:

Note: The single asterisk indicates reappointments. The double asterisk indicates new appointments. Those without asterisks are previous year appointments whose terms are still in effect. They are listed here for information only.

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John J. Kelley, M.D. (NS)	1982-85
Joseph F. Kirschvink, M.D. (PD)**	1984-87
Donald E. Lee, M.D. (OBG)	1983-86
Robert G. Maxfield, D.O. (GS)**	1984-87
Donald R. Miles, M.D. (OPH)	1983-86
Richard L. Morgan, M.D. (ORS)	1983-86
Arthur F. Morrison, M.D. (U)	1982-85
Carl A. Nau, Jr., M.D. (AN)	1982-85
George B. Peat, M.D. (GS)**	1984-87
Murray F. Robertson, M.D. (ORS)	1983-86
Michael F. Rockwell, M.D. (OBG)**	1984-87
Edward R. Rogoff, M.D. (TR)	1982-85
H. Arlene Ross, M.D. (RHU)**	1984-87
Frederic L. Ruskin, M.D. (PD)	1983-86
George J. Samuels, M.D. (GS)**	1984-87
Leonard B. Schultz, M.D. (A)	1982-85
Michael R. Schultz, D.O. (GP)**	1984-87
Warren S. Silberman, D.O. (IM)*	1984-87
Gregory P. Stevens, M.D. (IM)**	1984-87
Charles W. Swetnam, M.D. (FP)*	1984-87
Ashton B. Taylor, M.D. (GE)*	1984-87
Andrew R. Thomas, M.D. (U)*	1984-87
Wilbur C. Voss, M.D. (IM)	1983-86
John A. Wagner, M.D. (OTO)	1983-86
Glenn W. Waterkotte, M.D. (PD)**	1984-87
Thomas A. Webster, M.D. (AN)*	1984-87
Carl S. Wellish, M.D. (P)	1983-86
H. Kern Wisner, M.D. (PS)	1983-86
Gerald D. Wolfley, M.D. (FP)	1982-85

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Earl J. Baker, M.D. (TS)	1984-85
President	
Richard L. Collins, M.D. (ORS)	1984-86
Secretary	
John K. Crowe, M.D. (DR)**	1984-87
Robert E. Eckardt, M.D. (OM)*	1983-87
Geraldine L. Freeman, M.D. (AI)	1984-86
Thomas F. Hartley, M.D. (A)**	1984-87
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President-Elect	
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Jay B. Lavine, M.D. (OPH)	1983-86
Edward J. Lefeber, Jr., M.D. (IM)	1983-86
Lloyd T. Lorbeer, M.D. (OM)	1982-85
Darwin L. Richardson, M.D. (FP)	1983-86
Richard M. Riedy, M.D. (PUD)	1983-86
Hugh B. Woodward, M.D. (OM)	1983-86

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Richard L. Collins, M.D. (ORS)	1984-86
Secretary	
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President-Elect	
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James B. Klein, M.D. (CRS)	1983-86
Christopher T. Maloney, M.D. (CDS)	1983-86
Lola P. Shapiro, M.D. (PTH)**	1984-87
Seymour I. Shapiro, M.D. (D)	1983-86
Walter K. Sosey, M.D. (GP)*	1984-87
Harold C. Tretbar, M.D. (RHU)*	1984-87

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Secretary	
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President-Elect	
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Louis C. Kossuth, M.D. (PH)	1983-86
Donald R. Miles, M.D. (OPH)*	1984-87
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Michael V. Rock, M.D. (GE)**	1984-87
Samuel I. Rothman, M.D. (GP)**	1984-87
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George S. Woodard, Jr., M.D. (ORS)*	1984-87

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Earl J. Baker, M.D. (TS)	1984-85
President	
Richard L. Collins, M.D. (ORS)	1984-86
Secretary	
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Morton H. Dubnow, M.D. (IM)*	1984-87
Robert L. Fox, M.D. (GP)*	1984-87
Paddy R. Garver, M.D. (FP)**	1984-87
David E. Glow, M.D. (FP)	1983-86
Manuel Ma. Guerrero, III, M.D. (EM)	1982-85

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President-Elect	
Stuart I. Holtzman, M.D. (PM)	1983-86
ames N. Lane, M.D. (FP)	1983-86
Stephen R. Rakower, M.D. (GS)	1983-86
Raymond A. Vaaler, M.D. (OBG)**	1984-87
Amor C. Villareal, M.D. (PD)**	1984-87
Louis C. Young, M.D. (GS)	1983-86

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. Bradley Gordon, M.D. (PD)**	1984-87
Marilyn J. Heins, M.D. (PD)*	1984-87
Gary L. Henderson, M.D. (GS)	1984-85
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Phillip W. Kantor, M.D. (GP)	1983-86
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Alex Newman, M.D. (R)*	1984-87
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Gary Waddinton, M.D. (D)	1982-85
R. Wayne Wood, M.D. (HS)	1982-85

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Stanley Brysacz, D.O. (GP)	1983-86
W. Scott Chisholm, M.D. (PD)	1982-85
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Secretary	
Richard Darby, D.O. (GP)	1983-86
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Daniel T. Field, M.D. (CHP)	1983-86
Richard O. Flynn, M.D. (GP)*	1984-87
Cathy A. Geisert, M.D. (PD)**	1984-87
Lawrence Green, M.D. (ORS)	1983-86
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Gary L. Henderson, M.D. (GS)	1984-85
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Laurence M. Linkner, M.D. (ADM)	1983-86
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Laurance B. Nilson, M.D. (END)	1982-85
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Edward Sattenspiel, M.D. (OBG)**	1984-87

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Gary L. Henderson, M.D. (GS)	1984-85
President-Elect	
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Lester E. Mayes, Jr., M.D. (NPM)	1982-85
H. Belton P. Meyer, M.D. (NPM)	1982-85
William J. Moore, M.D. (OBG)	1982-85
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Jogeswar Rath, M.D. (FP)	1982-85
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Hermann S. Rhu, Jr., M.D. (GYN)*	1984-87
William C. Scott, M.D. (OBG)	1982-85
Lewis S. Shenker, M.D. (OBG)	1982-85
William A. Susong, M.D. (OBG)	1982-85
Luis S. Tan, M.D. (PD)	1983-86
Herbert L. Winograd, M.D. (PD)	1983-86
Donald J. Ziehm, M.D. (OBG)	1982-85

Medical Economics Committee	**TERM**
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President	
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Richard L. Collins, M.D. (ORS)	1984-86
Secretary	
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Richard H. Daley, M.D. (ORS)*	1984-87
Vicente O. Enciso, M.D. (OBG)**	1984-87
Stephen K. Gibson, M.D. (AN)**	1984-87
Samuel Goldfein, M.D. (IM)	1983-86
Edwin G. Goldstein, M.D. (DR)*	1984-87
Gary L. Henderson, M.D. (GS)	1984-85
President-Elect	
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John F. Kahle, M.D. (FP)**	1984-87
Laurence M. Linkner, M.D. (ADM)*	1984-87
Bruce A. Mallin, M.D. (ORS)*	1984-87
William S. Nevin, M.D. (IM)	1983-86
Jeffrey, A. O'Connor, M.D. (FP)	1982-85
Joseph N. Portnoy, M.D. (AN)	1982-85
Ernesto B. Rodis, M.D. (ND)	1982-85
Sol Z. Weinzweig, M.D. (GP)	1982-85
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R. Jack M. Zeluff, M.D. (AN)*	1984-87

Medical Education Committee	**TERM**
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Earl J. Baker, M.D. (TS)	1984-85
President	
Richard L. Collins, M.D. (ORS)	1984-86
Secretary	
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Thomas F. Disney, M.D. (RHU)**	1984-87
Kenneth A. Dregseth, M.D. (GP)	1982-85
Michael C. Dugan (Student)**	1984-87
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Palmer C. Evans, M.D. (OBG)	1982-85
Nathan W. Goff, Jr., M.D. (IM)	1982-85
Samuel Goldfein, M.D. (IM)*	1984-87
Stuart M. Gould, Jr., M.D. (P)*	1984-87
Robert E. Hastings, M.D. (GS)	1982-85
Gary L. Henderson, M.D. (GS)	1984-85
President-Elect	
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Kent K. Kleinkauf, M.D. (U)	1982-85
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Donald E. McHard, M.D. (FP)	1982-85
George H. Mertz, M.D. (GS)*	1984-87
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Ashton B. Taylor, M.D. (GE)*	1984-87
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Patrick T. Phalen, M.D. (GS)	1983-86
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Hugh W. Randel, M.D. (GPM)*	1984-87
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elma E. Targovnik, M.D. (D)**	1984-87
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ublic Relations Committee	**TERM**
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arl J. Baker, M.D. (TS), President	1984-85
President	
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eorge F. Brown, M.D. (FP)*	1984-87
onald L. Christ, M.D. (GS)*	1984-87
rs. Eloise Clymer	1983-86
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ary L. Henderson, M.D. (GS)	1984-85
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uth H. Capp, M.D. (P)**	1984-87
ichard L. Collins, M.D. (ORS)	1984-86
Secretary	
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Underwriting Review Committee	**TERM**
Neil O. Ward, M.D. (OTO)*	1984-85
Chairman	1982-85
Earl J. Baker, M.D. (TS)	1984-85
President	
James L. Beach, D.O. (GP)	1982-85
Dennis W. Berry, M.D. (OTO)**	1984-87
Bruce D. Bingham, M.D. (ORS)	1982-85
Robert A. Brock, D.O. (S)	1982-85
James O. Brooks, D.O. (GP)	1982-85
John C. Bull, M.D. (PS)**	1984-87
William E. Cain, M.D. (AN)**	1984-87
Richard L. Collins, M.D. (ORS)	1984-86
Secretary	
Patrick N. Connell, M.D. (EM)	1983-86
C. Truman Davis, M.D. (OPH)	1983-86
Clifford D. DeBenedetti, M.D. (PD)*	1984-87
Theodore Ditchek, M.D. (DR)	1982-85
Herbert Dozoretz, M.D. (IM)	1982-85
Thomas W. Eyler, D.O. (GP)*	1984-87
Brian D. Fairfax, M.D. (D)	1983-86
David P. Folkestad, M.D. (PD)	1982-85
Morton Fuchs, M.D. (IM)	1983-86
Samuel Goldfein, M.D. (IM)*	1984-87
Mark Gross, M.D. (OBG)	1983-86
Harry W. Hale, Jr., M.D. (GS)	1982-85
Thomas F. Hartley, M.D. (A)*	1984-87
Gary L. Henderson, M.D. (GS)	1984-85
President-Elect	
Mark Ivey, Jr., M.D. (GP)	1982-85
Douglas P. Jensen, M.D. (IM)	1983-86
Paul T. Lenio, M.D. (GS)**	1984-87
Robert B. Leonard, M.D. (GS)	1982-85
James H. Levi, M.D. (ORS)	1983-86
Bruce A. Mallin, M.D. (ORS)	1982-85
Geralf Marshall, M.D. (PTH)	1983-86
Keith E. McReynolds, M.D. (LAR)**	1984-87
Alfred W. Miller, Jr., M.D. (ORS)	1982-85
Christopher D. Nahm, M.D. (OBG)**	1984-87
Darwin W. Neubauer, M.D. (GS)*	1984-87
Lynn D. Newman, M.D. (OBG)	1982-85
Jeffrey C. Northup, D.O. (OBG)**	1984-87
William F. Osborn, M.D. (U)	1982-85
M. Dale Parry, D.O. (GP)	1983-86
Gordon D. Peters, M.D. (AN)	1983-86
Larry P. Putnam, M.D. (AN)**	1984-87
Alan L. Rinestone, M.D. (PS)**	1984-87
Charles M. Rucker, M.D. (TS)	1983-86
Edward Sattenspiel, M.D. (OBG)*	1984-87
Elwood L. Schmidt, M.D. (FP)	1983-86
Marvin C. Schneider, M.D. (FP)	1982-85
John P. Schwartz, D.O. (GP)**	1984-87

William C. Scott, M.D. (OBG)*	1984-87
Andrew G. Shetter, M.D. (NS)	1983-86
Jane M. Simonsen, M.D. (FP)	1983-86
Herbert C. Simonson, M.D. (EM)*	1984-87
Ronald P. Spark, M.D. (PTH)	1983-86
Ronald D. Suiter, M.D. (ORS)	1982-85
William A. Susong, M.D. (OBG)	1982-85
John H. Tedford, M.D. (OPH)	1983-86
Glen L. Walker, M.D. (GP)	1983-86
John A. Wilson, M.D. (DR)*	1984-87

ArMPAC Board of Directors	**TERM**
William N. Neubauer, M.D. (GS)* Chairman	1984-85
Ernesto L. Aguilar, M.D. (IM)*	1984-85
Paul L. Armerding, M.D. (GS)*	1984-85
Earl J. Baker, M.D. (TS) President	1984-85
Richard L. Collins, M.D. (ORS) Secretary	1984-86
Edwin G. Goldstein, M.D. (DR)**	1984-85
Mrs. Sandy Goodsite*	1984-85
Manuel Ma. Guerrero, III, M.D. (EM)*	1984-85
Gary L. Henderson, M.D. (GS) President-Elect	1984-85
Samuel J. Hessel, M.D. (DR)**	1984-85
Jay A. Katz, M.D. (ORS)*	1984-85
William H. Kidd, M.D. (AN)**	1984-85
Kenneth A. Lucas, M.D. (TR)*	1984-85
Mrs. Diane Madden**	1984-85
William J. Mangold, Jr., M.D. (PS)*	1984-85
Thomas F. Moore, M.D. (OPH)*	1984-85
Jane M. Orient, M.D. (IM)**	1984-85
Neopito L. Robles, M.D. (GS)**	1984-85
Jeffrey A. Singer, M.D. (GS)*	1984-85
Walter K. Sosey, M.D. (GP)**	1984-85
Stephen R. Stein, M.D. (ORS)**	1984-85
Mrs. Helen Stern*	1984-85
Iain A. D. Todd, M.D. (U)*	1984-85
Andrew R. Rhomas, M.D. (U)**	1984-85
Brendan D. Thomson, M.D. (IM)**	1984-85
Richard H. Weyer, M.D. (D)*	1984-85
R. Wayne Wood, M.D. (ORS)*	1984-85
Anthony T. Yeung, M.D. (ORS)**	1984-85

Ad Hoc Awards Committee	**TERM**
Richard L. Dexter, M.D. (CD)* Chairman	1984-85
Earl J. Baker, M.D. (TS) President	1984-85
Richard L. Collins, M.D. (ORS) Secretary	1984-86
Gary L. Henderson, M.D., President-Elect	1984-85
John F. Kahle, M.D. (FP)*	1984-85
Clyde W. Kurtz, M.D. (U)*	1984-85
William G. Payne, M.D. (GP)**	1984-85
Eleanor A. Waskow, M.D. (DIA)**	1984-85

Ad Hoc Indigent Health Care Committee	**TERM**
Herbert L. Winograd, M.D. (PD)* Chairman	1984-85
Earl J. Baker, M.D. (TS) President	1984-85
Richard L. Collins, M.D. (ORS) Secretary	1984-86
Suzanne E. Dandoy, M.D. (GPM)*	1984-85
William J. Dunn, M.D. (IM)*	1984-85
Thomas L. Embry, M.D. (FP)**	1984-85
Jay S. Fleishman, M.D. (CLP)**	1984-85
Thomas F. Griffin, M.D. (FP)**	1984-85
Gary L. Henderson, M.D. (GS) President-Elect	1984-85
Charles Kalil, M.D. (GP)**	1984-85
John V. Kelly, M.D. (OBG)**	1984-85
Howard W. Kimball, M.D. (GS)**	1984-85
Mary E. MacGuire, M.D. (GS)*	1984-85
Gerald Marshall, M.D. (PTH)**	1984-85
Luis A. Munoz, M.D. (GS)**	1984-85
Patricia A. Nolan, M.D. (PH)**	1984-85
John E. Oakley, M.D. (GS)*	1984-85
Robert H. Page,M.D. (FP)**	1984-85
William M. Peoples, M.D. (PDC)**	1984-85
Efraim G. Pineres, M.D. (GP)**	1984-85
Ernesto B. Rodis, M.D. (ND)**	1984-85
Jose M. Santiago, M.D. (P)**	1984-85
Scott P. Smith, M.D. (IM)**	1984-85
Walter K. Sosey, M.D. (GP)*	1984-85
Stephen R. Stein, M.D. (OSR)**	1984-85
Neil O. Ward, M.D. (OTO)*	1984-85
Joseph S. Whaley, M.D. (FP)**	1984-85

Ad Hoc Membership Committee	**TERM**
Neil O. Ward, M.D. (OTO)* Chairman	1984-85
Earl J. Baker, M.D. (TS) President	1984-85
John C. Bull, M.D. (PS)*	1984-85
John T. Clymer, M.D. (P)*	1984-85
Richard L. Collins, M.D. (ORS) Secretary	1984-86
Charlene M. DeHaven, M.D. (IM)**	1984-85
Joseph W. Hanss, Jr., M.D. (OBG)**	1984-85
Gary L. Henderson, M.D. (GS) President-Elect	1984-85
John K. Kerr, M.D. (PD)*	1984-85
Sharon M. Ondreyco, M.D. (HEM)**	1984-85
Neopito L. Robles, M.D. (GS)**	1984-85
Bienvenido V. Simuangco, M.D. (IM)**	1984-85
Burt Strug, M.D. (TS)**	1984-85
Thomas E. Vorpahl, M.D. (PTH)**	1984-85
Richard D. Zonis, M.D. (OTO)*	1984-85

During the discussion regarding appointments to the Ad Hoc Membership Committee and based upon a consensus that membership recruitment and retention should be ongoing, it was determined that future consideration be given to submission of a resolution during the 1985 meeting of the House of Delegates to establish such a committee as a standing committee of the Association.

DICAL ECONOMICS COMMITTEE

e Medical Economics Committee e Arizona Medical Association met ay 29, 1984.

e ICA Presentation discussion ered around the fact that ArMA passed a resolution to voluntarily ze physicians' fees for one year and that might apply to the ICA fees. It pointed out that the ArMA lution referred to fees charged to ate patients. Inasmuch as there was ncrease granted by the ICA in 1983, ept for radiologists) it was felt that pproach could be made from the dpoint that, in fact, wages had ady been frozen for a year.

cussion also centered on the eases in malpractice coverage.

ecause of the upcoming special ion on health care cost tainment, special effort should be de in the wording of whatever posal is presented to the ICA. It was consensus of the Committee, after ch discussion, that the presentation uld be brief, should point out that were frozen in 1983-1984, and an ease should tie into fees according he soon to be announced Maricopa ndation fees.

was recommended that the dical Economics Committee meet etime in September to discuss the come of the ICA hearings and to mulate legislation to be forwarded to Legislative Committee for the next ion.

inancial, Tax and Insurance posals: Letter from Esther Gross, .A., Securities Specialist, regarding Shelters was discussed briefly. It moved and carried to refer the er from Esther Gross to the Scientific embly Committee for consideration.

he Committee briefly reviewed all er proposals but expressed no erest in these items. Suggested a er be written to the various npanies informing them of the mmittee's decision.

EXECUTIVE COMMITTEE

special meeting of the Executive mmittee of the Arizona Medical ociation, was held at 810 West hany Home Road, Phoenix, Arizona, Thursday, June 7, 1984.

r. Baker first extended the preciation of the Association and its mbers to Messrs. Connell and Orr the Coalition's contribution in nging Dr. Paul Starr as a guest eaker for the April "Current rspectives" program.

r. Baker then made brief roductions of those in attendance, so t all might be more familiar with ch other's background and olvement in the ongoing concerns ating to health care cost containment and again stated the Association's position and desire that, rather than by initiative measure, cost containment be achieved by legislative action, hopefully in the upcoming special session.

Mr. Connell and Mr. Orr, representatives of the Arizona Coalition for Cost Effective Quality Health Care, with the assistance of their legal counsel, Mr. Leibow, attempted to explain, in great detail, the extensive time and effort which had been expended by the Coalition over the past two or three years in studying the problems of rising health care costs, developing what they believed was workable legislation, and negotiating with the Arizona Hospital Association for a solution that all parties could live with, it being strongly pointed out that hospitals—not physicians—were believed to be the major cause of escalating costs.

It was stated that only when all else failed had they gone to an initiative process which would, unless alternative legislation should be passed in the special session, go to the voters on the November ballot. In an attempt to respond to the concerns about the filing of a constitutional initiative, the Coalition representatives explained that, if passed by the voters, it would provide, by law, legislative authority to regulate the cost of health care but, as with all statutes, could be changed or repealed by the legislature at any time.

Mr. Connell expressed the belief that, as between the Association and the Coalition, there were more points in agreement than disagreement and the hope that a joint effort could be made to achieve a like goal—reduction of the cost of health care in Arizona without diminishing the quality of that care.

In regard to the upcoming special session of the legislature, Mr. Connell did indicate that the closest piece of legislation which would be considered would be the Barr-Babbitt bill and the Coalition would hope that ArMA would join it in using that as the vehicle for a reasonable compromise.

Following a lengthy discussion wherein many concerns and issues were raised and responded to, appreciation was extended to both groups for the opportunities this meeting had afforded to each.

AD HOC SALT REDUCTION COMMITTEE

The meeting of the Ad Hoc Salt Reduction Committee of the Arizona Medical Association was held June 16, 1984.

The committee received a letter submitted by Elsie E. Eyer, President of the Arizona Public Health Association, which suggested that the committee's primary emphasis should not be on governmental programs but should be to target manufacturers to encourage sodium reduction in their products. Dr. Kossuth stressed that, when the committee was created by ArMA, the Board intended for its priority to be "to examine programs that provide food at taxpayers' expense under governmental supervision." After more discussion, the committee agreed upon the following governmental programs:

1. Review of school lunch programs.
2. Review of food service programs at detention facilities.
3. Review of the WIC supplemental food program.
4. Review of the cafeteria menus at the state universities and community colleges.

It was agreed that the July committee meeting would address school lunches; August would deal with detention facilities; and September, with WIC.

The committee also agreed to pursue the following general programs:

1. Prepare 52 (or more) columns for free use by newspapers. (Julian DeVries suggested the articles should be from 600 to 700 words. Dr. Kossuth agreed to suggest 20 topics and asked each committee member to suggest five different topics.)
2. Urge the Governor to proclaim a Salt Reduction Week. It was suggested that May might be an appropriate time, since that month is designated High Blood Pressure Month.
3. Suggest that the Scientific Assembly Committee present a program on hypertension.
4. Suggest that menus served at medical meetings be within the National Academy of Sciences' safe and adequate range for sodium.

LEGISLATIVE COMMITTEE

The Legislative Committee of the Arizona Medical Association, Inc., meeting was held June 16, 1984.

Allan Stanton briefed the committee on legislative activities leading up to the special session scheduled to begin on Thursday, June 21, 1984. He reported that key legislators and the Governor have met regularly to try to develop a program for hospital cost containment that will address rates, CON and health planning. He also reported on his activities involving legislative leadership and the state Chamber of Commerce to convince hospitals to approach the legislature with a unified position.

Sandy Spellman, ArHA, briefly outlined the hospitals' position which includes a set of principles adopted at the ArHA Annual Meeting. It is felt that neither the Usdane/Kunasek proposal nor the Tucson hospitals' proposal (the so-called "Tuesday's option") would violate the ArHA principles.

Senator Robert Usdane, Majority Leader of the Arizona Senate, arrived at noon to share his thoughts with the committee. Senator Usdane stressed that the problem is not unique to Arizona and presented research on hospital regulation in other states. Other subjects the committee members discussed with the Senator included: open staffing, malpractice costs, Industrial Commission fee setting experience, cost shifting, the need for a constitutional amendment, peer grouping for hospital pharmaceutical costs, and creation of a data bank to assess cost containment efforts.

The committee agreed that since no specific proposals had been advanced at this time that a decision on the ArMA position would have to be made after the special session begins.

Future Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

JULY

The Twentieth Annual Day of Surgery and Medical Seminar
July 20, 21 & 22, 1984 at Northern Arizona University South Union Ballroom, to coincide with **The Flagstaff Festival of Arts.** Sponsored by the Coconino Medical Society. Approved for Category 1 credits which may be applied to the AMA Physicians Recognition Award. Contact: Thomas E. Vorpahl, M.D., Coconino County Medical Society, P.O. Box 392, Flagstaff, Arizona 86002.

AUGUST

Common Controversies in Obstetrics
August 10, 11, & 12, 1984, at the Jackson Hole Racquet Club Resort. Sponsored by University of Arizona College of Medicine. Contact: Drs. Robert Resnik, and Robert K. Creasy, Office of Continuing Medical Education, Tucson, Arizona 85724. Approved for 15 hours of Category 1 credit toward the Physician's Recognition Award of the American Medical Association.

SEPTEMBER

Clinical Seminar Series, What's New in the Surgical Specialties
September 15, 1984, University of Arizona Health Sciences Center, Tucson, Arizona, Office of Continuing Medical Education and Outreach.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICA INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Cen 350 W. Thomas Rd., Phoenix, AZ 8501 Sponsor: St. Joseph's Hospital & Medic Center.
Contact: John R. Green, M.D.
Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first an third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurolo conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthoped and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Flo Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City 85372. Contact: Martha R. Newby, Ed.D Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, Ju Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, Ju Sept. & Nov.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M

roved for Category 1 credit.
ical Conference
Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

0 South Dobson Road, Mesa, Arizona. ntact: William Selezinka, M.D. Approved Category 1 credit.
E Programs
ekly, Tuesday, 7 p.m., Cafeteria-West d.
nical Conference — Dept. of Medicine
ekly, Thursday, 12:30-1:30 p.m. Buffet nch, Grande Rm.
/GYN Medical Staff Conference
ekly, Monday, 12:30-1:30 p.m. Grande .
diatric Case Conference
d Friday, 12:30 p.m., Grande 2.

UMANA HOSPITAL PHOENIX

47 East Thomas Road, Phoenix, Arizona 016. Contact: Medical Staff Secretary for ditional information.
ysicians Continuing Education Program
Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

00 N. Wilmot Road, Tucson, AZ 85712. ntact: Eric G. Ramsay, M.D. Approved Category 1 credit.
mily Practice Department Meeting
Monday, 12 Noon, (June, Sept. and c.) Contact: R. Grossman, M.D.
rgical Department Meeting
Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

5 N. Beaver Street, P.O. Box 1268, gstaff, AZ 86002. Contact: B. C. schberg, M.D., CME Program Clinical nference. Approved for Category 1 dit.
eresting Case Conference
Tuesday, 12:30 p.m., Tollefson Rm.
nical Conferences
ekly, Tuesdays, 12:30 p.m., lefson Rm.
mor Board Case Conference
Tues., 12:30 p.m., Hospital Conf. Rm.
rtality & Morbidity Conference
Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1 East McDowell Rd., Phoenix, AZ 06. Approved for Category 1 credit.
stetrical Sectional Conference
Monday, 12:30-1:30 p.m., Conf. Rm. E.
necological Section Conference
Monday, 12:30-1:30 p.m., Conf. Rm. E.
stetrical Sectional Conference
Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.
Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.
Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008.
Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.
Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
1st & 3rd Monday, 12 Noon.
Medicine GI
2nd & 4th Monday, 12 Noon.
Medicine Dermatology
5th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m.
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m.
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7:30 a.m.

Anesthesiology Journal Club
4th Thursday, 8:00 a.m.

Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.

Burn Mortality Conference
4th Thursday, 8:00 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.

Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.

OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.

Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12:30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251.
Contact: Tom Disney, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.

Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am. - 8:30 am., Phillips Auditorium

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.

Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.

Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.

Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.

Cardiovascular-Thoracic Record Reviev
3rd Wednesday, 12:15 p.m., Auditorium.

Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.

Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.

Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.

Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.

Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.

Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.

Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a Pediatric Department.

Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.

ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.

Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.

Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.

Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711
Contact: Yvonne Clingerman, Medical S Office. Approved for Category 1 credit.

Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium

Surgery Department Conference
4th Monday, 12 Noon, Auditorium

Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.

Ophthalmology Case
2nd Tuesday, 7:30 a.m.

Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium
Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1 W. St. Mary's Road, Tucson, AZ
03. Contact: see below.
nthly Specialty Conference — Dept. of
gery
Monday, 7:30 a.m., Century Rm. A.,
ntact: Med. Staff Office.
nt Liver Conference - Lab Conference
om
Monday of each month - 12:00 noon.
ind Rounds: Medical, Surgical, Family
ctice, Pathology, Radiology
ekly, Thursday.
ergency Medicine Lectures
ekly, Thursday, 8:00 a.m.,
ntury Rm. A.
rdiology Conference
ekly, Friday, 8:00-9:00 a.m., Century
., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

1 E. Grant Road, Tucson, AZ 85716.
ntact: Eric G. Ramsay, M.D. Approved for
egory 1 credit.
diology Conference
3rd, & 5th Mondays, 12 Noon,
ntact: M. Maximov, M.D.
matology Conference
Monday, 5:00 p.m.,
ntact: R. Miller, M.D.
locrinology Conference
Monday, 12 Noon,
ntact: M. Parker, M.D.
hrology Conference
Monday, 12 Noon,
ntact: Stephen Seltzer.
chiatry Department Meeting
Monday, 12 Noon,
ntact: Howard Winkler, M.D.
inatal Conference
Tuesday, 7:00 a.m.
gical Conference
Tuesday, 7:15 a.m.
matology Conference
Tuesday, 12 Noon,
ntact: Gerald Giordano, M.D.
monary/Infectious Disease Conference
ekly except 4th, Tuesday, 12 Noon,
ntact: B. Friedman, M.D.
hopedic Conference
Tuesday, 7:30 p.m.,
ntact: Jay Katz, M.D.
diatric Grand Rounds
& 3rd Tuesdays, 12:30 p.m.,
ntact: Dr. Lightner.
urophysiology Conference
Tuesday, 5:00 p.m.,
ntact: Robert Foote, M.D.
nical Pathology Conference
t Wednesday, 8:00 a.m.,
ntact: Dr. Fuchs.
mily Practice Meeting
Wednesday, 12:30 p.m., Jan., April,
y, & Oct. Contact: C. Mangelsdorf, M.D.
dical Conference
ekly, Wednesday, 8:00 a.m.,
ntact: M. Fuchs, M.D.
urology-Neurosurgery Conference
ekly, Wednesday, 12 Noon,
ntact: H. W. Buschsbaum, M.D.
uroradiology Conference
ekly, Thursday, 5:00 p.m.,
ntact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon,
Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon,
Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m.,
Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m.,
Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m.,
Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Urology Conferences
Weekly, Tuesdays, Room 2413 - Uropathology
Weekly Tuesdays, Room D-335 — Consultation
Weekly, Fridays, Room 3134 — Uroradiology
These activities are a part of the CME program at the Veterans Administration Medical Center
Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm. T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery — Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesdays, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly, Tuesdays, 8:00-9:00 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly, Wednesdays, 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursdays, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd, & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly, Friday. 12:00-1:00 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.
Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.
Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Department of Internal Medicine.
Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.
Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.
Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma, Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.
Radiology Conference
1st Tuesday, 7:00 a.m.
Operation Outreach
2nd Tuesday, 6:30 p.m.
Pathology Conference
4th Tuesday, 7:00 a.m.
Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Drs. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m., Contact: Dr. Ewy.

Cardiology Non-invasive Conference
Weekly, Friday, 3:30 p.m., Contact: Dr. Ewy.

Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn, Contact: Karen Garcia.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Contact: Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Department of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conferen
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 550

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noo
AHSC & VA Hospital
Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC, Contact: Dr. J. Goldstone.

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The XXXII Annual Convention of the Medical Society of the United States and Mexico will convene in Guadalajara, Jalisco, Mexico, November 14—17, 1984. For convention or membership informati call or write: **Mr. Kevin Walker,** Executive Secretary, Medical Society of the United States and Mexico, 810 West Bethany Home Road, Phoenix, Arizona 85013. (602) 246-8901.

Neurology and Dermatology, the Annual Fall Pediatrics Conference, sponsored by the Arizona Pediatrics Society. October 1 14, 1984 at the Doubletree Hotel, Tucson, Arizona. Approved for Category 1 credit hours. Featured speakers will include: Jo M. Freeman, M.D. of Johns Hopkins University, Gerald N. Goldberg, M.D., Peggy Ferry, M.D., Allan Kaplan, M.D., an James Rasmussen, M.D., University of Michigan. Contact: Lolly Dwan, Coordinator, CME — University of Arizon College of Medicine, Tucson, Arizona, 85724.
(602) 626-6173.

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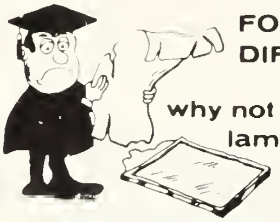

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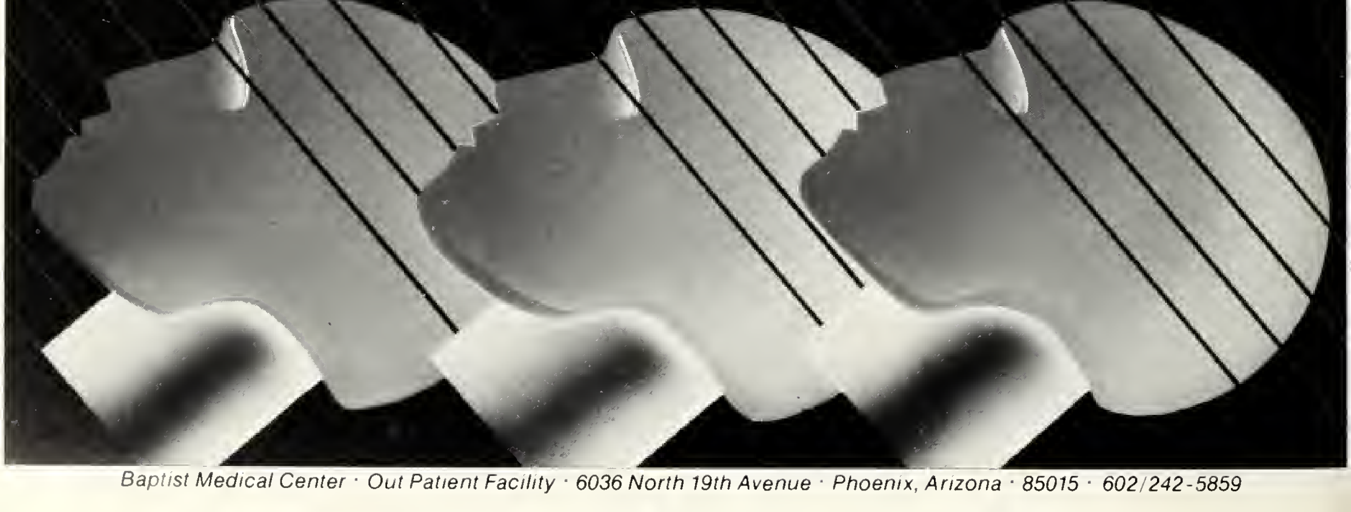

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A WORD TO THE WHYS

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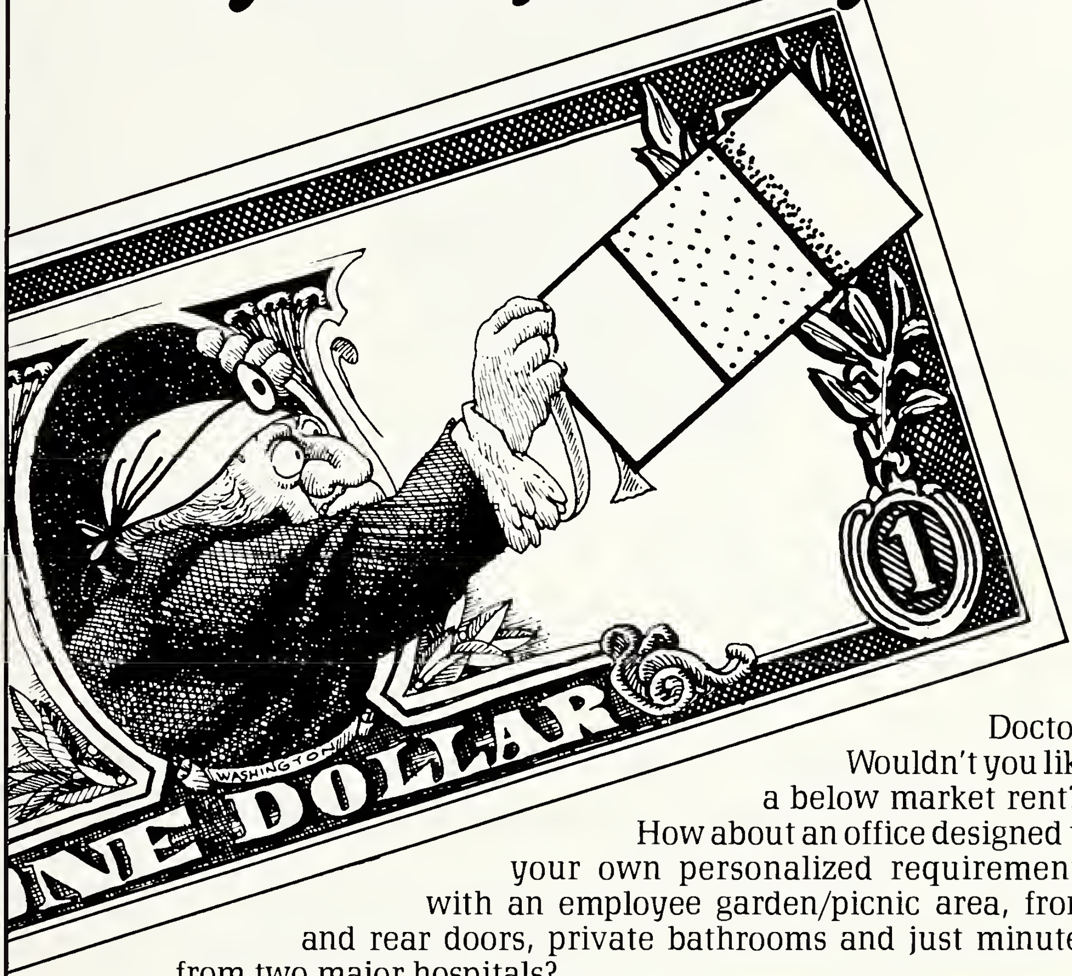

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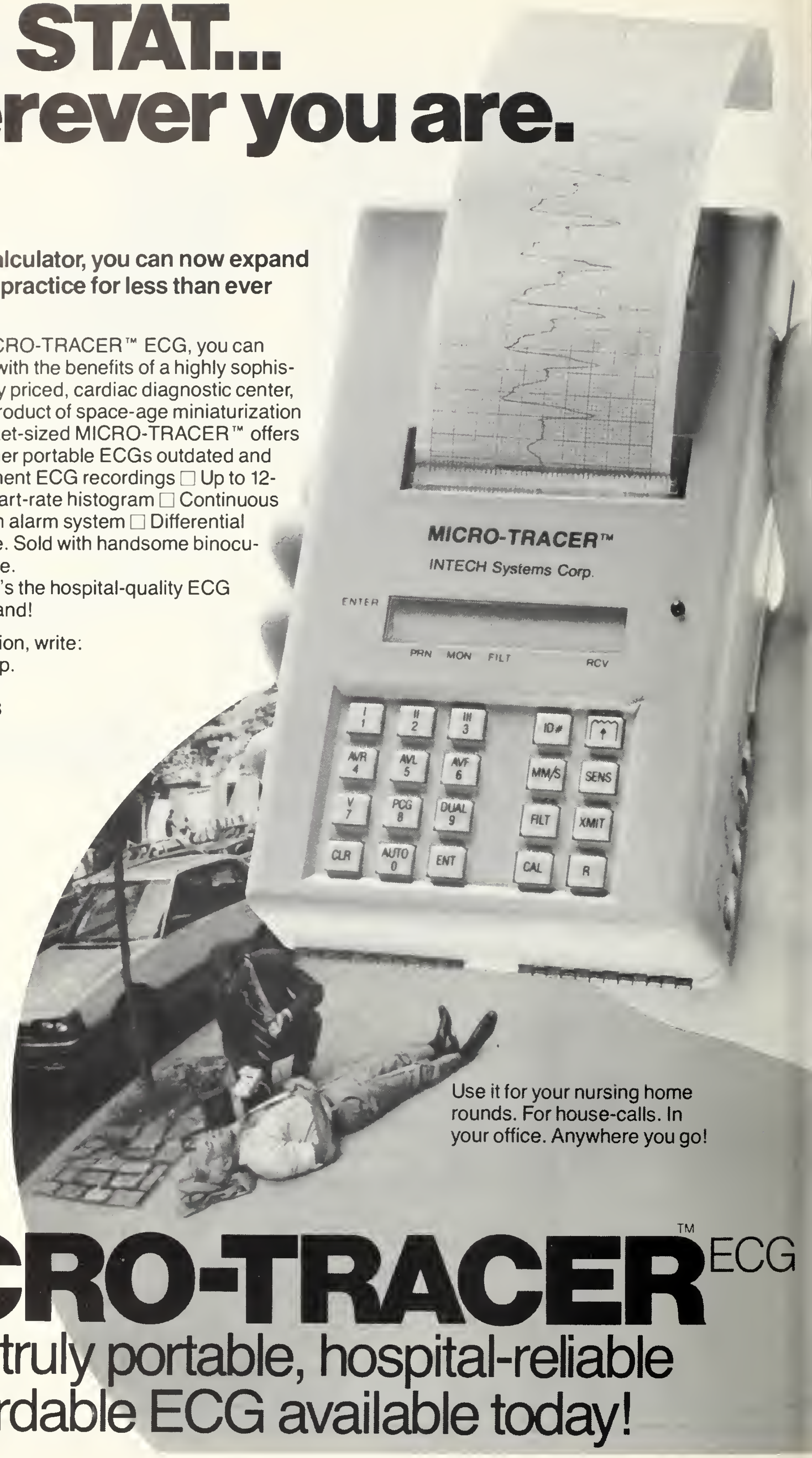

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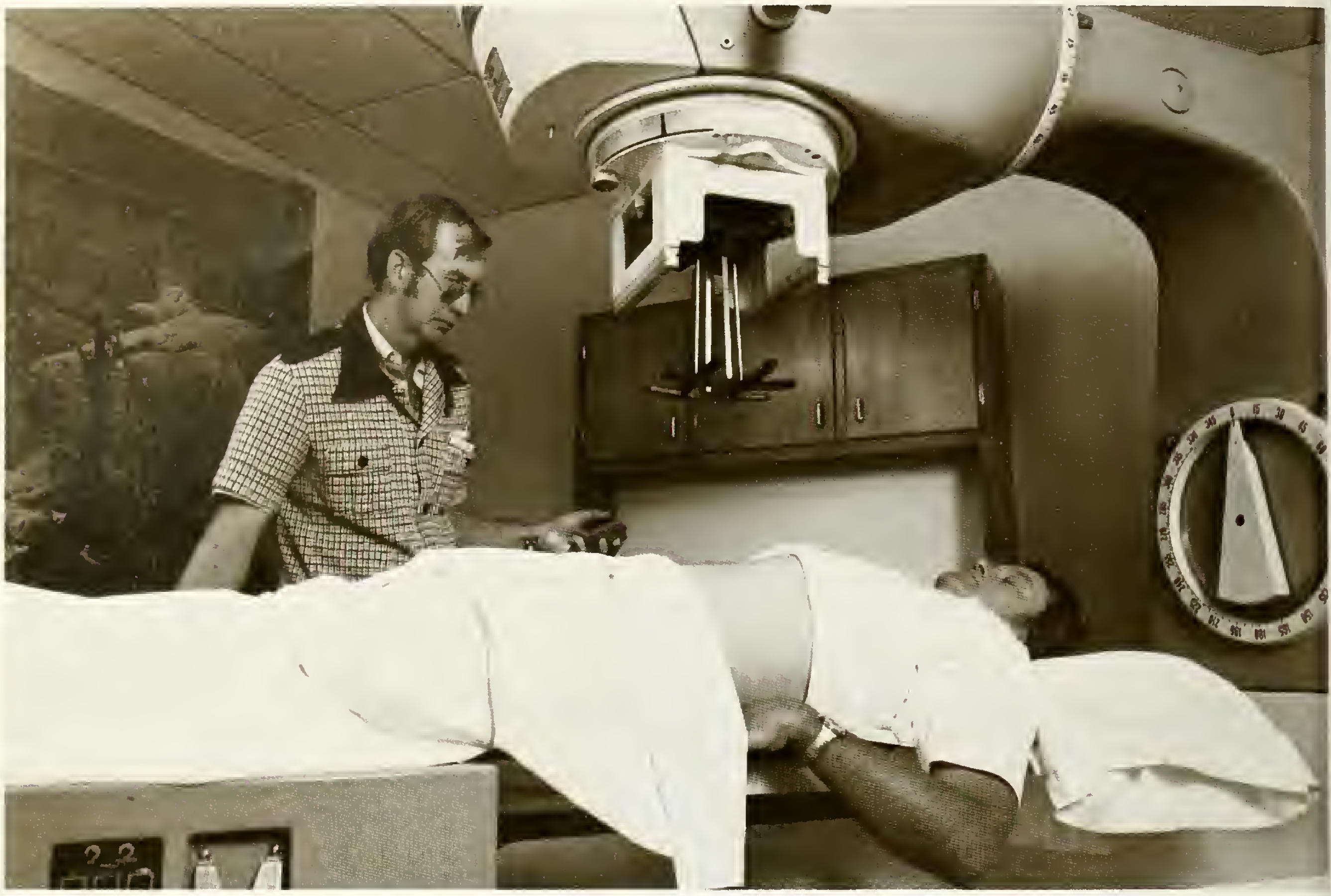

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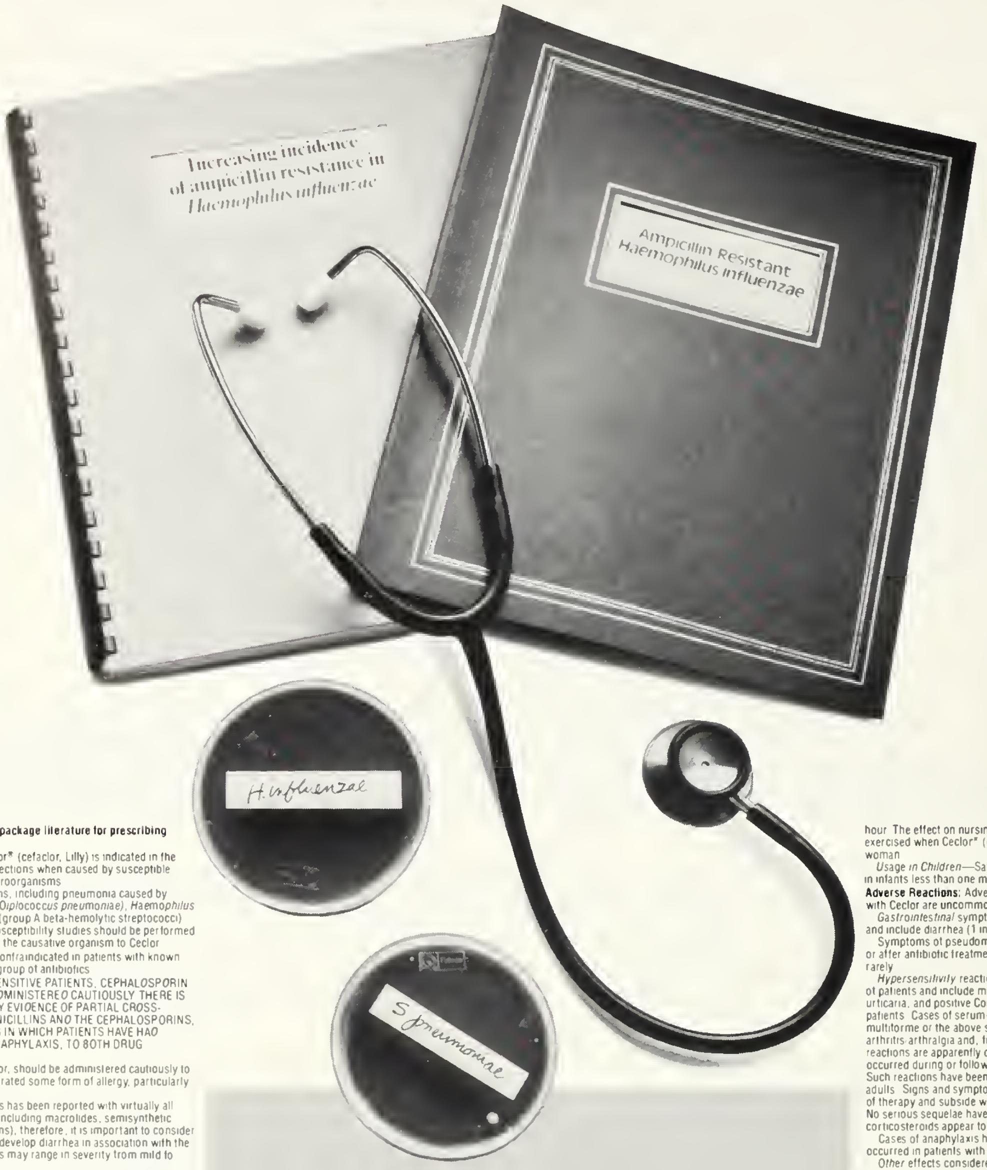
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Warnings. IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone In moderate to severe cases, management should include sigmoidoscopy appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by C *difficile* Other causes of colitis should be ruled out

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g , pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy appropriate measures should be taken

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor There are, however, no adequate and well-controlled studies in pregnant women Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses Average levels were 0 18, 0 20, 0 21, and 0 16 mcg/ml at two, three, four and five hours respectively Trace amounts were detected at one hour The effect on nursing infants is not known Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2 5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients)

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200)

[061782R]

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* Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S pneumoniae* or *H influenzae* [8]

Note Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information

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Cardiology

Cardiac Rupture

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Introduction

Fifteen percent of patients admitted to the hospital with acute myocardial infarction (AMI) will die during their hospital course.[1] Since a majority of these deaths are due to arrhythmias and pump failure, attention has been focused on these problems with substantial reduction of mortality. The third leading cause of in-hospital death from AMI is cardiac rupture, which accounts for ten percent of fatal outcomes. During the past few years, there have been considerable advances in the antemortem diagnosis of this devastating complication of AMI, but therapy is controversial and presents a major challenge. In this review, only the subset of patients with left ventricular free-wall rupture will be discussed, as this entity is eight to ten times more common than septal or papillary muscle rupture and has unique features with reference to pathophysiology, diagnosis, and management.[2]

Etiology and Pathogenesis

AMI is by far the most common cause of rupture, b occasionally the disorder is observed in other settings. these cases, possible causes include infective endocar tis, myocardial abscess, dissecting aneurysm of the sir of Valsalva, syphilitic myocarditis, tuberculosis, ech ococcal cyst, malignancy, and trauma.[3] In the setting AMI, rupture should not be envisioned as a "blowou of the ventricle. Rather, the picture is one of dissecti through a necrotic, hemorrhagic, softened myoc dium. The endocardial opening is usually tiny; the d section often takes a circuitous route through t myocardium, producing a 2 mm to 3 cm rent of t epicardium, which can be ragged, gaping, linear, three-cornered.[2,4] On the basis of clinical dating of t time of infarction, this process occurs within one day 20% of cases, two days in 50%, and five days in 57% cases. Eighty-nine percent of all cases of rupture occ within 14 days of infarction.[5] The small number patients who experience rupture after two weeks oft have a reinfarction, a false aneurysm, or rarely a tr aneurysm.[2]

Comprehension of the known mechanisms a course of myocardial necrosis and scar formati explains the typical time course of rupture. Light micr scopic evidence of necrosis is evident within four to hours of coronary occlusion, with gross changes visib by 24 hours. Infiltration by polymorphonuclear leuk cytes is evident at this time. With disappearance of mu cle fibers by the fourth day due to enzymatic a scavenging actions of white blood cells, the inflamm tory alterations diminish. Capillary and new connecti tissue formation begins around the seventh day, w collagen deposition apparent by the twelfth day. Rem val of dead muscle is complete by three weeks, and t completed scar is established at three months.[6]

Ninety percent of ruptures involve the left ventric Interestingly enough, there is a higher prevalence lateral wall rupture than would be expected based the clinical incidence of AMI at this site. This phen menon is probably based on the fact that both papilla muscles insert into the lateral wall, thereby resulting shear stresses that are greater than those present els where in the left ventricle.[2] The low pressures operati in the right heart demand less wall tension, and ventric lar rupture in the setting of right-sided infarction is qu uncommon. In summary, wall tension is a much great determinant of the propensity for rupture than size infarction, which does not correlate well with the in dence of rupture.[7]

An understanding of the relationship between t extent of coronary artery disease and rupture sheds lig on its genesis. In nearly all cases, the coronary arte supplying the site of rupture is totally occluded. T incidence of recent coronary occlusion is higher patients dying from this complication of AMI wh compared with subjects who die from arrhythmias pump failure. At the same time, patients with ruptu have a significantly lower incidence of old corona

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From: Good Samaritan Medical Center, Institute for Cardiovascular Diseases, 1111 East McDowell Road, Phoenix, Arizona 85006. Supported in part by the E. Nichols Memorial Fund and The Institute for Cardiovascular Diseases, Inc., Phoenix, Arizona. Reprint requests to Alberto Benchimol, M.D., Good Samaritan Medical Center, P. O. Box 2989, Phoenix, Arizona 85006.

clusion and prior infarction. These considerations ggest that myocardium lacking collateral blood supply subjected to more intense ischemia and necrosis, and is increased intensity of necrosis predisposes to rup- re. Therefore, AMI in the setting of chronic ischemic art disease is less likely to result in rupture.[2,5]

sk Factors for Rupture

Rupture is rare before the sixth decade of life, and has peak incidence after the age of sixty. It occurs with ual frequency in both sexes and therefore, the relative k for women is higher than in men.[7,8] A history of high ood pressure prior to AMI is no longer thought by any authorities to predispose to rupture. On the other nd, the occurrence of post-infarction hypertension efinitely increases the risk.[7] A higher mean blood pres- re increases myocardial oxygen demand by virtue of evated afterload, which in turn intensifies any underly- g ischemia and necrosis. A history of heart failure is re in subjects with AMI and rupture. Aneurysms are ten incorrectly thought to predispose to rupture. ctually, formation of an aneurysmal scar in the location an AMI indicates that the risk is negligible since rup- res occur in the setting of softened, hemorrhagic, ecrotic tissue.[2] There is only a single well documented se of true aneurysm rupture in the English language erature.[9,10]

Various medications have been studied in relation to pture. The earlier view that anticoagulants increase e risk is not widely accepted. Although early reperfu- on of infarcts with bypass surgery or thrombolysis creases bleeding into the necrotic zone, no conse- uent increased incidence of rupture has been shown.[11] ne use of steroids during AMI has been associated with increased risk of rupture. Ibuprofen (Motrin®) has een shown to thin post-infarction scar tissue in experi- ental animals and is believed to possibly increase sus- eptibility to rupture;[11] this association has not been ocumented clinically. The use of vasopressors for the eatment of cardiogenic shock has not been reported to use rupture.[6] To the extent that these drugs are used in mounts causing relative hypertension, the risk could ossibly be increased. Procedures such as cardiopulmo- ary resuscitation and repeated intracardiac injections ave not been associated with a predisposition to pture.[8]

For decades, the traditionally prescribed strict bedrest llowing AMI was based on the assumption that early hysical activity increased cardiac work, imposing stress n the infarcted area which would lead to rupture. The egree of activity after AMI has not been shown to be lated to the incidence of rupture in a careful autopsy- ased study.[8]

linical Course

Three different clinical courses are described in atients suffering cardiac rupture. The most common resentation is sudden electromechanical dissociation MD) and death. A second setting is the rapid onset of emopericardium and acute tamponade. A third course ay be described as subacute, often presenting as pericarditis with mild to moderate hemodynamic impairment due to tamponade.[12,14] In patients not dying suddenly, the rapid development of dyspnea, cyanosis, jugular venous distention, syncope, respiratory arrest, hypotension, and finally EMD is strongly suggestive of rupture. The same picture, culminating in EMD, can also be due to extensive reinfarction or pump failure. Persistent or recurrent pericarditis pain, with or without a friction rub but not associated with new ECG changes portends rupture. The hemodynamic findings of tamponade will often be found in these patients.[2,12,14]

Non-invasive Diagnostic Studies

Bates, et al.[2] have succinctly described the various ECG manifestations of cardiac rupture. The sudden occurrence of EMD in the setting of recurrent pain after ECG documentation of a Q-wave infarction is nearly always based on rupture. The acute appearance of tall, peaked T waves in the precordial ECG leads is a feature of the sudden hemopericardium associated with rupture. Such peaking is a nonspecific finding, since it can also be due to hemopericardium secondary to dissection of the proximal aorta, or a sinus of Valsalva rupture. The increase in intrapericardial potassium from hemolyzed red cells is thought to cause the observed peaking of T waves.

There are no arrhythmias which are diagnostic of rupture. However, the onset of sinus or A-V junctional bradycardia will often herald terminal rupture by about ten minutes, via activation of pericardial stretch receptors and the vagus nerve. Tachyarrhythmias are uncommonly due to rupture and in the setting of recurrent pain and hypotension, they are usually secondary to pump failure and shock. Finally, the ECG "M-complex" has been described as suggestive of rupture. It consists of a monophasic R-S complex with an upright T wave and progressive ST elevation.

Chest x-ray and echocardiography can aid in the diagnosis of pericardial effusion. The presence of increased pericardial fluid on the echocardiogram is not diagnostic of tamponade. Significant tamponade can occur without fluid being seen, especially when a technically difficult study is obtained.[12] Therefore, the value of echocardiography resides in lending support to the diagnosis of rupture in the setting where the clinician already has a high index of suspicion.

Invasive Diagnostic Studies

Angiography has been used to diagnose rupture and demonstrates the lesion by showing extravasation of contrast medium into the pericardial space.[16] The primary disadvantage of angiography is the time often required to arrange and perform a proper study.[13] Successful guidance of a needle into the pericardial space with removal of 50 cc of blood will lead to rapid clinical improvement of the patient who has tamponade due to rupture. In this setting, the procedure can be both diagnostic and life-saving. Failure to observe clinical improvement after presumed pericardiocentesis does not rule out tamponade, because the needle may have been inserted into a cardiac chamber. Electrocardiographic and/or ultrasonic needle guidance improves the accuracy of pericardiocentesis and these technics should be utilized whenever the patient's clinical condition permits.[17]

Since cardiac tamponade is an important clinical feature of cardiac rupture in those patients not dying suddenly, Swan-Ganz floating balloon catheter insertion has been advocated as an aid to diagnosis.[4,11-13] The previously described subacute course of rupture can also be seen in the settings of ventricular septal rupture[12] or right ventricular infarction.[13] Septal rupture can be detected by noting a step-up of oxygen saturation in blood sampled from the right atrium and right ventricle. Right ventricular infarction can be especially difficult to differentiate from tamponade. Both entities can produce hypotension, jugular venous distention, and pulsus paradoxus with equalization of mean right atrial, right ventricular diastolic and mean pulmonary wedge pressures. However, in right ventricular infarction, deep inspiration causes the right atrial pressure to rise, whereas it does not change or decline in the presence of tamponade. Right ventricular infarction is associated with a rapid "X" descent and even deeper "Y" descent of the jugular venous pulse or central venous pressure. In contrast, tamponade results in a rapid "X" descent and a blunted or absent "Y" descent. In this connection, it is important that attention be directed to properly obtaining high quality central venous or right atrial pressure waveforms when inserting Swan-Ganz floating balloon catheters. This pivotal aspect of diagnosis is often overshadowed by the attempts to record pulmonary artery and wedge pressures.

Management of Left Ventricular Rupture

In cases of profound hypotension, absent pulses and EMD, external cardiac massage is undertaken but fruitless if the etiology is free wall rupture.[18] If neck vein distention is present and the index of suspicion high, pericardiocentesis should be attempted without delay. In the acute setting, definitive diagnosis is difficult. The failure of external cardiac compression to produce pulses in the presence of QRS complexes on the ECG should mandate subxiphoid or parasternal needle insertion to relieve a possible tamponade. The yield of such attempts, with stabilization and emergency operative intervention, is extremely poor but occasionally patients have survived. The implications of diagnostic needle insertions during cardiopulmonary resuscitation have been addressed and the technic is advocated by authorities in the field.[2]

When the course of rupture is subacute, there may be adequate time for accurate diagnosis, stabilization of the patient, and preoperative preparation. The hemodynamic compromise attendant to hemopericardial tamponade may require simultaneous pericardial aspiration, intravenous volume loading and use of inotropic agents such as dopamine or dobutamine. Since there is a dearth of data and experience with emergency operative procedures, no consensus of opinion can be offered regarding the appropriate surgical approach. Cardiovascular surgeons who report such cases tend to reco mend, in anecdotal fashion, what has provided succ for them.

As of March, 1982, 15 patients had been reported the English literature who: 1) experienced free-wall ru ture, 2) were successfully operated, and 3) discharg home.[3,4,12-14,16,18-23] Five of six reviews and case reports survivors since 1980 have recommended repair of t ventricular rupture with the patient on complete bypa deferring coronary grafting. Grafts are usually n implanted until a later date unless the status of the cor nary arteries happens to be known by virtue of previo catheterization.[11-13,15-16] The emphasis is on rapid rep of the most life-threatening problem, which is the ru ture. Four of six such studies emphasize the utility echocardiography and Swan-Ganz catheterization evaluation of the subacute presentation which was d scribed earlier.[4,11-14,16]

In conclusion, cardiac rupture is uncommon, occu ring in 10% to 15% of those subjects who die of myoc dial infarction in the hospital. A risk factor profile for t problem has been outlined in this paper. By maintaini vigilance for this disastrous event, the possibility exi that the subset of patients with subacute onset can diagnosed utilizing a combination of invasive and no invasive techniques. Definitive surgical repair and sur val is possible in this group and operation should performed on an emergency basis. In the unfortun majority of patients with ventricular rupture and ac collapse, immediate pericardiocentesis with restorati of circulation and blood pressure followed by imm diate surgical intervention offers the only hope.

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Gastroenterology

Endoscopic Injection Sclerotherapy of Esophageal Varices

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Clinicians treating patients with bleeding esophageal varices have been excited and confused by the mass of literature concerning the status of endoscopic variceal sclerotherapy (EVS). The procedure appears to be the

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answer to the high mortality and morbidity of emergency portosystemic shunt surgery, however, the incidence of complications and questionable extension of longevity and the need for repeated dangerous endoscopic procedures causes concern and therapeutic conservatism. With fiberoptic endoscopy, accurate diagnosis and treatment of bleeding varices is possible. While there remain many unanswered questions concerning EVS, the widespread use of this procedure indicates the need for a brief review of the recent data, indications, technique and results.

The Case for EVS

The typical patient with bleeding esophageal varices has advanced liver disease and 42% of this group will be dead in a two month follow-up period, most will die from variceal hemorrhage, 90% who survive an initial variceal bleed will bleed again within one year.[1,2] The efficacy of EVS must be evaluated in terms of control of acute variceal hemorrhage, prevention of recurrent bleeding and reduction in mortality. Many retrospective, uncontrolled studies indicate that EVS can control acute hemorrhage in 72% to 90% of patients.[3-6]

Indications

The present approach to the patient with active variceal hemorrhage includes intravenous pitressin given at .4U per minute. In the past, the Sengstaken balloon would be passed and inflated in the cardia of the stomach and in the lower one-third of the esophagus. We no longer use balloon tamponade since a majority of these patients will rebleed when the balloon is deflated. While 78% of bleeding varices can be temporarily controlled with the balloon, its present use is at best a secondary one.[7]

Most of the patients treated with EVS are Child's class C and in the past EVS was reserved for this group. Presently when we perform upper endoscopy and see a bleeding varix, it is injected until bleeding ceases. If at endoscopy, no other bleeding lesions are present and large varices are the only possible cause of hemorrhage, EVS is done on an elective basis within 12 to 24 hours. The varices injected must be of large size since there is good correlation between large variceal size and likelihood of hemorrhage.[8] If bleeding recurs after acute injection therapy, EVS is repeated. Following cessation of the acute bleeding episode with EVS, the patient is scheduled for chronic sclerotherapy. This is carried out over a six week period until all varices are obliterated. Most can be obliterated in four to seven sessions. If patients present with a history of chronic upper gastrointestinal bleeding and varices are the only possible source, these too are treated with EVS until obliteration.

Prophylactic EVS

While not widely practiced, prophylactic EVS is receiving more consideration. Paquet has reported a prospective randomized trial on 71 patients.[9] All had large varices. In the treated group EVS was used until variceal obliteration occurred. In a three-year follow-up, 80% of the conservatively treated group died from variceal hemorrhage as contrasted to only four deaths in the l group which were due to liver failure.

Technique

Currently, most endoscopists use fiberoptic en scopes and intravenous sedation when performing E Balloons attached to endoscopes in various ways various reasons are not effective in altering flow i predictable fashion.[10] The injector is a 23 gauge nee in a teflon sheath, which is a disposable item. The sc rosing solutions vary but we use 1.5% sodium tetrade sulfate.

Injections are made into the varices beginning at cardioesophageal junction and working upwards. M bleeding occurs in the area. Generally about 15 to injections are made into the variceal complex, especi into those veins which give evidence of recent bleedi The large varices are injected first. Total volume of sc rosant used at one treatment varies between 10cc a 30cc. We inject up to 2cc per site. The procedure repeated in five days and then at intervals until all vari have been obliterated. After the first two sessions, tre ment is given on an outpatient basis.

Histopathology Following EVS

EVS induces an inflammatory reaction to the scle sant. Thrombosis develops in the submucosal vari Mural necrosis followed by fibrosis has been found patients effectively treated with EVS.[11]

Complications

Esophageal ulceration and perforation are the m serious complications. Ulceration in itself may not b complication unless accompanied by perforation bleeding. In careful follow-up studies we have fou ulceration in two-thirds of our patients examined frequent intervals. Most ulceration is superficial but o ers are deep and require weeks to heal. Perforati occurs in two percent to four percent. Chest pain, fe and pleural effusion are common.[12] Esophageal strict occurs in about nine percent but is usually easily dilat

Results

EVS must be compared with other forms of therapy a randomized clinical trial. Important outcome fact which must be considered are transfusion requiremen rebleeding, complications, cost of treatment and t need for other therapeutic interventions. MacDoug has studied 107 patients with bleeding varices. I showed that EVS significantly reduced rebleeding a increased survival.[13] Terblanche demonstrated that E significantly reduced the frequency of hemorrhage the treated group.[14] However, in another study by t same author in a group of patients followed for fi years, repeated EVS failed to improve the long-te survival.[15] Sivak has demonstrated decreased transfusi requirement in patients undergoing EVS.[16] Conn su marizing nine RCT's of EVS found that the procedure uniformly beneficial, and is more effective in reduci recurrent hemorrhage and death than the control the apy which included medical management, tampona and gastroesophageal devascularization.[17]

he cost of treating a patient with bleeding esopha- ıl varices without surgery, is about $44,000. The mean gical expense is about $51,000. Chung compared dical treatment EVS, variceal obligation operations] shunts. The cost per survivor at two years was lower h EVS.[18]

VS has rapidly evolved and is now the first choice in rapy of bleeding varices. It can be used effectively to p acute hemorrhage and repeated until all varices are iterated. It reduces the incidence of rebleeding and number of transfusions required. It is not certain ether it will increase long term survival. Despite asso- ted complications EVS is surprisingly safe. Further ntrolled studies are needed but it is presently the atment of choice in the patient with acute hemor- ge from esophageal varices.

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Industrial Medicine

Scheduled versus Unscheduled Disability Under the Worker's Compensation Act of Arizona

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Initially, you should recognize that the word "disability" is essentially a legal concept and "impairment" a medical concept. Impairment is always established by medical information (opinion and otherwise); on the other hand, disability is established administratively (whether it be by the industrial insurance carrier or the Industrial Commission of Arizona). Medical information (again, opinion information as well as diagnostic findings) assists in this administrative determination.

The definition of "impairment" and "disability" as applied to the Worker's Compensation Act of this state is specifically defined in the *Guides to the Evaluation of Permanent Impairment*, published by the American Medical Association. That definition has been specifically adopted by our Supreme Court. The pertinent portion of the Guides on that subject states:

"I. *We adopt the definition of the terms 'permanent impairment' and 'permanent disability' found in the PREFACE* to the American Medical Association Guides:

'1. *Permanent Impairment.* - This is a purely *medical* condition. Permanent impairment is any anatomic or functional abnormality or loss after maximal medical rehabilitation has been achieved, which abnormality or loss the physician considers stable or nonprogressive at the time the evaluation is made. It is always a basic

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consideration in the evaluation of permanent disability.

'2. *Permanent Disability.* - This is not a purely medical condition. A patient is "permanently disabled" or "under a permanent disability" when his actual or presumed ability to engage in gainful activity is reduced or absent because of "impairment" which, in turn, may or may not be combined with other factors.

'3. *Evaluation (Rating) of Permanent Impairment.* - This is a function that physicians alone are competent to perform. Evaluation of permanent impairment defines the scope of medical responsibility and therefore represents the physician's role in the evaluation of permanent disability.

'4. *Evaluation (Rating) of Permanent Disability.* - In the last analysis, this is an administrative and not solely a medical responsibility and function. Evaluation of permanent disability is an appraisal of the patient's present and future ability to engage in gainful activity as it is affected by such diverse factors as age, sex, education, economic and social environment, in addition to the definite medical factor—permanent impairment. . ." *Smith versus Industrial Commission,* 113 Ariz. 304, 552 P. 2d 1198 (1976).

The Guides provide useful and applicable information with regard to a multiplicity of organic and mental disorders. This information should be employed by the physician in the initial rating considerations. However, it must be pointed out that our Supreme Court has specifically held the Guides are simply that—guides, and not an exclusive directory for determining the percentage of impairment. A physician may consider other pertinent, applicable criteria in addition to the Guides in determining the impairment percentage. As an example, many physicians find that the Guides do not provide a specific formula for diagnostically establishing the loss of strength in an extremity. Therefore, to obtain objective information concerning such loss of strength for use in rating the percentage of permanent impairment, many medical people are utilizing the results of testing equipment presently available, such as the Cybex and Cybex II.

Scheduled versus Unscheduled Disability

Whether a residual impairment is to provide compensation to the patient/worker on a scheduled or unscheduled disability basis is an administrative responsibility and need not be of concern to the physician. A brief and simple explanation of the difference, however, may be of some benefit in terms of background information.

Essentially, a scheduled disability concerns a residual impairment of function which affects a particular portion of the anatomy listed in a schedule found in A.R.S. § 23-1044(B) of the Worker's Compensation Act. Subsection (B) refers to the functional impairment as "*loss of use*".

The fact that the anatomical impairment is listed in the schedule is not necessarily determinative of the ultimate classification of the impairment. Other considerations, purely legal in nature, may cause an impairment to be converted from a scheduled to an unscheduled impairment. An example would be a pre-existing impairme to that extremity. Again, the ultimate determination the classification of an impairment as scheduled unscheduled is an administrative/legal matter, dete mined by matters beyond the scope and responsibility the physician.

If the anatomical impairment of function is schedule a legal, conclusive presumption arises that a work d ability exists to the extent of the percent of impairme sustained. That percentage of impairment is arrived and based upon medical considerations and determin the actual amount of compensation to which t employee is entitled. For example, the statute provid that the entire loss of a lower extremity entitles t employee to receive 55% of his/her average month wage for 50 months, regardless of whether or not th employee can return to his/her regular work. Therefo if the injury results in a 25% impairment of the low extremity, the employee would be entitled to 25% of t 50 months (the percent of wage drops from 55% to 50 if it is less than a total loss of use) or one-half his/h average monthly wage for 12.5 months (25%) of months), regardless of whether or not the employee capable of returning to work.

An anatomical impairment which is not found in t schedule referred to above is compensated as unscheduled disability. If the anatomical impairment determined to be unscheduled, the employee's entitl ment to permanent disability compensation depen upon an administrative determination of whether or n that impairment affects the employee's ability to retu to work. If it does, and the employee can no longer ea what he/she was earning at the time of the injury, th employee receives a percentage of the differen between his/her wage at the time of injury and wh he/she is able to earn thereafter. If it does not, t employee is not entitled to any permanent disabili compensation benefits. Should the employee suffer loss of earnings and be entitled to compensation ben fits, these benefits will continue for as long as the wo disability exists.

Summary

As stated above, once the patient's medical conditi is stationary and he/she is ready to be rated, the phys cian should utilize the *Guides to Evaluation of Perma ent Impairment* for assistance in arriving at the initi impairment rating if, in fact, one exists. If the physici feels there are other criteria not covered by the *Guide* also important in terms of the overall functional impai ment, the physician should use that information in t rating, including whatever information he/she feels pertinent, equitable and reasonable, bearing in mi that any superfluous information that is later deemed be inappropriate and/or not applicable, will be elim nated. In this regard, the physician may take in account the effect the impairment has on t employee's ability to perform his/her job. In oth words, the rule of thumb should be in favor of providi surplus information, rather than the opposite.

Medical
Genetics

uples with Repeat Spontaneous Abortions:

romosome Abnormalities

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stract

ince chromosome abnormalities are a common
se of spontaneous abortions, we examined lympho-
e chromosomes from 145 Arizona and Nevada cou-
s with recurrent miscarriages. All couples had had
two or more spontaneous abortions. We found structural chromosome abnormalities, including translocations, and an inversion, and numerical chromosome abnormalities. One in every six couples had a chromosome abnormality. Lymphocyte chromosome analysis of couples with recurrent spontaneous abortions disclosed chromosome abnormalities capable of causing not only losses in pregnancy, but also mental retardation and multiple malformations in children.

Introduction

According to the Oxford English Dictionary, a miscarriage is a failure. For families who have had two or more miscarriages, they tend to reflect failures in reproduction.

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In medicine, the usual term for a miscarriage is a spontaneous abortion. Couples with two or more spontaneous abortions are classed as having *repeat spontaneous abortions*, irrespective of whether they have normal children.

It is now clear that the single most common cause of spontaneous abortion is chromosome abnormality with too much or too little genetic material. There are two approaches to this subject. One is to study chromosomes from the repeat spontaneous abortion couple. The other is to study chromosomes from the products of concept. Since these are often a matter of history, we chose to test couples themselves with repeat abortions.

In 1978 a couple was seen at The Genetics Center because of repeat spontaneous abortions. They wished to know how and why this had happened. Blood samples were drawn from these parents and chromosome studies done. The mother had chromosome mosaicism with both normal *and* XXX cells.

This case led to a large study of couples with repeat spontaneous abortions. The aim was to determine if repeat spontaneous abortion couples have not only an increase in structural chromosome, but also an increase in chromosome mosaicism.

Design of Study

Only couples were admitted to the study who had had two or more spontaneous abortions and had *no* abnormal children. Some couples had no children, while others had normal children. The common feature was two or more miscarriages.

Referral of couples was by physicians, clinics and hospitals. The physicians were in family practice and in obstetrics and gynecology in Arizona and Nevada.

A genetic history was obtained from each couple in pedigree form detailing the family reproductive and health history. Then samples of 5 cc to 10 cc of blood were drawn into sterile heparinized greentop tubes.

Lymphocytes were cultured for three days with the specific mitogen, phytohemagglutinin, harvested for chromosome preparations and banded by trypsin-Giemsa: exposure to the enzyme trypsin and staining with Giemsa dye. Fifteen sequential metaphases were analyzed microscopically, and two were photographed under the microscope. All chromosome abnormalities were recorded from each cell. Evidence for mosaicism was that two or more cells possessed the same abnormality.

A series of 145 couples with normal reproductive histories was studied for comparison as controls. Their lymphocyte chromosomes were analyzed in the same way.

Results

Among 145 repeat abortion couples, six (4%) were found to have structural chromosome abnormalities. The abnormalities are listed in Table 1 and comprise two Robertsonian (centric-fusion) translocations, three reciprocal translocations and an inversion. The controls had no structural chromosome abnormalities. These findings confirm the known elevation in translocations and inversions in repeat abortion couples.

Table 1
Structural Chromosome Abnormalities in 145 Couples With Repeat Spontaneous Abortion

Class of Chromosome Abnormality	Karyotype
Robertsonian translocations	45,XX,t(13q14q) 45,XY,t(13q14q)
Reciprocal translocations	46,XX,t(2;7) 46,XX,t(11;12) 46,XX,t(13;21)
Inversion	46,XY,inv(14q)
Total number of structural abnormalities	6
Total number of couples studied	145
Proportion of couples with structural chromosome abnormalities	4%

The numerical chromosome abnormalities were t
lied. Among the 145 repeat abortion couples, 19 perso
were found to have mosaicism. Compared to contro
there was a highly significant difference ($P < 0.001$), in
cating that repeat spontaneous abortion couples hav
notable elevation in chromosome mosaicism.

The types of numerical chromosome abnormalitites
the repeat abortion couples are presented in Table 2.
numerical abnormalities involved sex chromosomes,
Y in males and the X chromosome in females. None
these individuals appeared in any way clinically a
normal.

Table 2
Numerical Chromosome Abnormalities in 145 Couples With Repeat Spontaneous Abortions

Type of Chromosome Abnormality	Karotype	No. of Person
Missing sex chromosome	45,X	14
Extra sex chromosomes	47,XXX	3
Missing and extra sex chromosomes	45,X/47,XXX	2
Total number of numerical chromosome abnormalities		19
Total number of couples studied		145
Proportion of couples with numerical chromosome abnormalities		13%

The total of all chromosome abnormalities in the 1
couples was 25 (17%) as indicated in Table 3.

Table 3
Structural and Numerical Chromosome Abnormalities In 145 Couples With Repeat Spontaneous Abortions

ype of Chromosome Abnormality	No. of Persons
tructural abnormality	6
lumerical abnormality	19
otal all abnormalities	25
otal number of couples studied	145
roportion of all couples with chromosome abnormalities	17%

Translated into numbers, one in every 25 couples had translocation or inversion; one in every eight couples ad mosaicism; and overall one in every six couples had detectable chromosome abnormality.

iscussion

Couples with repeat spontaneous abortions have an levation in translocations and inversions. The couples ave an elevation in sex chromosome mosaicism. In the xperience reported here, one in six couples with repeat pontaneous abortions had a chromosome abnormality. he overall findings of chromosome abnormalities was 7%.

What is new in this study? The elevation in translocaons where material is moved from one chromosome to nother has been well documented. The finding of nversions of chromosome is also not particularly new. Vhat is new is the finding of sex chromosome osaicism.

The mosaicism appears to be low level. Only a small roportion of cells showed 45,X with a missing sex hromosome or 47,XXX with an extra X chromosome. Vhat is the explanation for the chromosome mosaicism?

1. *Turner mosaicism*: The woman with 45,X cells ay have an insufficiency of ovarian hormones, an stablished feature of Turner syndrome.

Case *illustration*: One woman with two spontaneus abortions required Clomid treatment on both occaions to become pregnant. Chromosome studies howed her to have 45,X/46,XX,47,XXX mosaicism.

2. *Obligatory nondisjunction*: Individuals with bnormal numbers of chromosomes in gonads may by ecessity produce germ cells with abnormal numbers of hromosomes. This is obligatory nondisjunction with ailure of normal chromosome distribution.

Case *illustration*: A man whose wife had two sponaneous abortions had 45,X/46,XY chromosome mosaicsm. She conceived again and spontaneously aborted a 5,X conception. Most (at least 95%) of conceptions with 5,X alone are spontaneously aborted.

3. Case *illustration*: Persons with abnormal numers of chromosomes in lymphocytes may have trouble ontrolling normal chromosome distribution.[1-4] Lymphocytes with sex chromosome anomalies are an indication of this problem. In germ cells, random chromosome abnormalities result in spontaneous abortions or in the birth of a chromosomally abnormal child.

Case *illustrations*: A woman with 45,X/46,XX had three spontaneous abortions. She conceived again and had another spontaneous abortion. The products of concept showed 69,XXX: triploidy.

A woman with repeat spontaneous abortions was found to have 46,XX/47,XXX mosaicism. She conceived, went to term and delivered a baby. The baby had trisomy 21 Down's syndrome (mongolism).

The initial step in working up a couple with two or more spontaneous abortions is to obtain a careful reproductive history including the number, timing and nature of pregnancy losses as well as the number and health of liveborn children. The second step is to work up the couple in the usual ways for infertility, since this may uncover an evident basis (anatomical, hormonal, etc.) for the repeat abortions. The third step is to evaluate the couple chromosomally. In a metropolitan area, one can refer the couple to a genetics center. In a smaller town or rural area, 5 cc to 10 cc samples of heparinized blood can be obtained in greentop tubes from the woman and her husband and sent for chromosome analysis.

A medical reason and a chromosome abnormality may *both* contribute to the abortions. At The Genetics Center, we saw a 26-year-old gravida 3, para 0, spontaneous abortion 3 woman living abroad where her husband is employed by an American company. She was home briefly visiting her parents. Because of the short time, history was taken and the workup done medically and chromosomally simultaneously. The medical workup disclosed a septate uterus. The chromosome studies disclosed a translocation.

The pain and frustration felt by couples with repeat spontaneous abortions are significant. This warrants appropriate evaluation with chromosome analysis to detect abnormalities that can cause spontaneous abortion or damage to future children.

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Neurology

Using Drugs to Try and Relieve Insomnia

Where Are We?

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There have been many occasions in the past when I have wished that hypnotic drugs had never been released to the physician's armamentarium, particularly when I have been frustrated to find them to be the cause of an unexplained coma or death, the cause of ataxia and confusion particularly in the elderly, the goal of a 3:00 a.m. insomniac's emergency room visit, or the explan tion for a hypnotic user's panic attack. At times it h been my prescription that has precipitated the crisis, ar I have felt guilty. At other times it was someone else allowing me to be critical. It is, however, only when yo have dealt with the insomniac a number of times th you can appreciate how easily you can get caught up the mistakes of their management. Physician and patie often both conspire to resolve this problem as soon ar as conveniently as they possibly can; the physician ofte liking dealing with the patient about as much as th patient likes staying awake. This conspiracy is the seed disaster. As a neurologist participating in a sleep di orders center, I do see and evaluate insomniacs, but a not adequately trained to cope with many of their pro lems; and thus I work as a team with a multidisciplina group including psychiatrists and psychologists, whi introduces necessary checks and balances.[1]

Management begins with diagnosis. If insomnia h developed within the prior month, it probably will tu out to be a temporary problem. The causes of transie insomnia include situational insomnia (excitement, an iety, grief), shift-work and jet lag.[2,3] I doubt that any no mal individual has not experienced this form insomnia at one time or another. Of all the types insomnia, this is the type that is most appropriate treated with sleeping pills.[4] Nevertheless, there is som controversy. Opponents of sleeping pills say that th convert situational into chronic hypnotic-depende insomnia. The proponents of sleeping pills state that this point of view has never been proven, 2) the chron insomnia may have had its foundations prior to the situ tional stress and would have developed regardless, ar 3) there is the possibility that if transient insomnia is n terminated by means of sleeping pills, it could equa well lead to the establishment of chronic psychophysi logical insomnia.

Transient insomnia is adequately dealt with by th primary physician. The problem should be explained the patient, reassurance should be given; and if appears that the stress will persist for some days, or if th patient appears to become further stressed by th insomnia, then a small nonrefillable prescription of suitable hypnotic can be given. The patient may n even need to take it—simply having it available ca resolve the problem.

Jet lag can be handled in two ways. The first is to for oneself to stay awake during the desirable hours, usi an alarm clock and fortitude, and allowing oneself sleep at appropriate times if tired. The subject experie ces daytime somnolence and poor performance for unpleasant week. The transition can be accomplishe more rapidly and comfortably by using a hypnotic induce sleep, an alarm clock to begin the day, and if at possible delay rather than advance the time retirement.

There is no solution for the rotating workshift if it properly designed and poorly tolerated other than f stopping it. It should be kept in mind that this practi

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only causes insomnia, but also hypersomnolence, fficiency and accidents during the shifts. (A properly igned rotating workshift rotates slowly to later rkshifts.)

here are many forms of chronic insomnia, and as a eral rule very few of them should be treated with notics.

rimary or idiopathic insomnia is a term applied to a m of insomnia in which no clearcut cause can be ntified. Although they do not seem to have an identi- ole underlying psychiatric disorder, when assessed chologically they have a tendency towards neuroti- m and depression.[5] The onset of the condition is long- nding and difficult to date. It tends to gradually eriorate. It may all or in part, be a form of psychophy- ogical insomnia.

sychophysiological insomnia can be diagnosed con- ently when its onset is precipitated by a stressful nt. The insomnia persists, being maintained by the and stress of being unable to sleep.[6] These patients sleep well when away from home or at an inappro- ate time, such as sitting in front of the television set, or le reading which confirms the presence of ditioning.

he management of the above groups is similar. The approach is sleep hygiene—videlicet. The bed uld be used for nothing other than sleeping and ual activity. If the patient cannot sleep he/she should ruminate about it or read in bed, but should go to living room and occupy him/herself until tired. The ht's schedule is maintained by a regular awakening an alarm clock. The patient should go to bed when d and should never stay up intentionally when tired. id alcohol and stimulants.[3,6] The use of hypnotics in se subjects is to be discouraged. Unfortunately, many hese patients are taking hypnotics in variable dosages eady, and management should consist of gradual ndrawal to a low maintenance level or no medication ll. Escalation of medication is out of the question.

sychotherapy including relaxation techniques, self- nosis and biofeedback may be useful. Drug habitua- n and personality disorders can make management icult and frustrating.

nsomnia can be a manifestation of psychiatric dis- ers.[7] Anxiety neurosis is associated with difficulty iating sleep, and depression with early morning kening. Management consists of treating the under- g cause and is beyond the scope of this article.

nsomnia is also an accompaniment of aging and neu- gic disorders.[8-10] Whether aging induces it through a tle neurological deficit mechanism is unclear. Char- eristics of sleep in aging and neurologic disorders are ilar. There are an excessive number of sleep stages, quent nighttime awakenings and daytime sleepiness. nagement consists of identifying and treating any ciated affective disorder. Sundowning is treated phenothiazine antipsychotics. Daytime activities encouraged, daytime naps are discouraged, and notics are avoided.

Certain neurologic disorders have a very pronounced and characteristic effect on sleep. Patients with nocturnal myoclonus have a periodic contraction of the leg muscles which causes numerous brief arousals. Sleep stage changes and frank awakenings result, leading to excessive daytime sleepiness. This condition is one of the few that justifies the chronic use of benzodiazepine hypnotics.[11] Clonazepam was originally suggested as a treatment for this condition because of its effectiveness in treating other conditions manifesting myoclonus. Since clonazepam causes daytime drowsiness, the patients really don't feel much better on treatment, and it is usually discontinued. Short acting benzodiazepine hypnotics seem to be the answer. They suppress the arousals caused by the myoclonus without causing daytime drowsiness. Another neurologic disorder causing severe disruption of sleep is the restless legs syndrome.[11] These patients experience a very disagreeable sensation in the legs whenever they rest or become drowsy, which compels them to walk or move the legs; and consequently they have difficulty getting to sleep. Nocturnal myoclonus is associated with this condition. Benzodiazepines should be tried first, but they're usually ineffective, and oxycodone usually has to be substituted.

A fairly large number of patients have a circadian rhythm disturbance. Their day is generally prolonged to 25 hours. This results in onset of sleep occurring one hour later every day so that eventually the patient is awake at night and sleeping during the day.[12] These patients are managed by means of chronotherapy, which simply means that the patient has to move his night to a conventional time by staying awake for a few extra hours each day. Therefore, his/her "night" shifts completely around the clock. When his/her "night" coincides with conventional hours, a regular morning awakening with an alarm clock prevents further slippage. No drugs are indicated. Even though their sleep cycles may be entrained, some individuals may still suffer intermittent insomnia because other cycles (temperature) remain free running and become out of phase.

A small percentage of patients with sleep apnea present with nocturnal awakenings rather than excessive daytime sleepiness.[13] These subjects generally have milder central sleep apnea. Depressant medications (including alcohol and hypnotics) are potentially dangerous and are contraindicated, as they prevent the patient from arousing and clearing the airways.[3]

In summary, hypnotics may be indicated in the treatment of situational insomnia—jet lag, nocturnal myoclonus, and restless legs syndrome. The selection of hypnotic drugs: See Table 1.

The barbiturates were introduced in the early 1900's,[14] and were the first relatively safe, effective and convenient hypnotics to be developed. Nevertheless, it soon became apparent that a physical addiction developed, large doses were eventually tolerated, and the period of withdrawal was dangerous.[15] Should one even disregard the withdrawal syndrome, the barbiturates should now

Table 1
Hypnotic Pharmacokinetics

Drug	Latency to Sleep Induction	Latency to Peak Blood Level	Duration of Action After Single Dose	Half Life of Active Products	Tendency to Accumulate ° Consecutive Nightly Use
Amytal			3-6 hrs[14]	8-42 hrs[15]	Yes[15]
Chloral hydrate				4-9.5 hrs[15]	
Ethchlorvynol				10-25 hrs[15]	
Glutethimide				5-22 hrs[15]	Yes-intermed[16]
Diazepam		Rapid[25]		20-90 hrs[15]	Yes-marked
Flurazepam	Decreased 30%[21]	Rapid[25] 1 hour[25]		24-100 hrs[15]	Yes-marked
Oxazepam		Slow[15]		3-21 hrs[15]	Yes-minimal[25]
Temazepam	Decreased 20%[25]	Slow[25] 2½ hrs[25]		8-24 hrs[19]	Yes-Intermed[25]
Triazolam	Decreased 38%	Intermed rate[25,19] 1-2 hrs[19]	May be early morning awakening. 3-4 hrs	1.5-5 hrs[25] 2.7-4.5 hrs[16]	No
Midazolam		Intermed[19] 2-3 hrs[19]		1-4 hrs[19]	No

still be considered inferior hypnotics for the following reasons: 1) the lethal dose of barbiturate is only fifteen times greater than the hypnotic dose due to a profound depressant effect they have on the brainstem respiratory centers,[15] 2) barbiturates are a cause of disturbed sleep[6] and paradoxically may produce or aggravate the insomnia for which they were originally prescribed and, 3) depending on the half-life of the barbiturate, there may be a "hangover" effect consisting of drowsiness and ataxia the next day. The only times that barbiturates should now be used as hypnotics are when idiosyncratic or allergic reactions have been demonstrated to the benzodiazepines.

Chloral hydrate is a hypnotic of an older vintage, not differing qualitatively in its hypnotic action or side effects from the barbiturates, other than that it has an unpleasant taste and causes gastric irritability.[15] At the present time chloral hydrate is the drug of choice for EEG recordings because it does not disturb the tracing as much as other hypnotics, particularly the benzodiazepines. Chloral hydrate should be used cautiously in patients with heart and liver disease.

When the addictive potential of barbiturates was discovered, pharmaceutical houses began to explore substitutes for this market, developing thalidomide, tertiary carbinols, piperidinediones and quinazolines. Thalidomide was withdrawn from the market following tragic teratogenic complications. The tertiary carbinols and piperidinediones are relatively safe, having a similar hypnotic efficacy, addictive potential, and a list of side effects as do the barbiturates. Tertiary carbinols available on the American market today include ethchlorvynol (Placidy) and ethinamate (Valmid).[16] Piperidinediones available include glutethimide (Doriden) and methyprylon (Noludar).[16] Glutethimide overdose produces a more prolonged coma with a less predictable outcome than do the barbiturates.[14] Methaqualone, the only m keted member of the quinazoline group, is as effect as the barbiturates, but has a tendency to accumula produce numerous side effects,[15] and has achieved su notoriety as a street drug, that the manufacturer recently ceased production. In short, the newer nonb biturate, nonbenzodiazepine hypnotics contribute lit to the physician's therapeutic armamentarium.

As hypnotics the benzodiazepines are the drugs choice, largely because of an extremely wide mar between the effective hypnotic dose and the lethal ov dose.[4] This safety is due to their having minimal depr sant effects on the respiratory and cardiovascu systems when administered alone.[15] The lethal dose benzodiazepine is well over 100 times the therapeu dosage.

There is a wide range of marketed benzodiazepin Although all benzodiazepines probably affect the ce tral nervous system in single instances in time, in exac the same way (i.e. by probably blocking a CNS anxie provoking neurotransmitter),[17] their clinical usefuln varies tremendously according to their availability to t CNS which essentially translates into a combination rate of absorption and rate of elimination.

An "ideal" hypnotic should be rapidly absorb inducing sleep shortly after administration. It should r be eliminated so rapidly that it causes awakening in t early hours of the morning, nor so prolonged tha causes daytime sedation as well as accumulation. should reach its peak concentration in a half hour a have a half-life of about eight hours.[18]

It should be kept in mind that the duration of action a single dose of a drug having a long half-life may considerably shortened by rapid distribution to pe pheral tissues such as fat. Therefore, a single dose may rt-acting whereas any repeated doses will have a re prolonged duration of action as the body's distri- tion reserve becomes saturated. With multiple dos- s clearance half-life is critical in determining the ration of action of the drug and its tendency towards umulation.[19]

lurazepam (Dalmane) is rapidly absorbed with peak els being attained within an hour. The elimination e for desalkylflurazepam, an active metabolic by- oduct is unfortnately too slow, varying from 40 to 150 urs.[20] Daytime cognitive functioning is impaired early a course of this hypnotic, and there is a steady accum- tion of desalkylflurazepam as the course is con- ued.[21] Therefore, flurazepam is a less preferable onotic unless daytime sedation is desired. It would be surd to prescribe a short acting hypnotic to a patient o is receiving daytime benzodiazepine sedation such diazepam (Valium). If only a single dose of hypnotic is ended, flurazepam is acceptable.

emazepam (Restoril) is more slowly absorbed. Peak els with the current marketed preparation are tained two and one-half hours after ingestion. The flife is in the intermediate range of about 8 to 24 urs.[20] There is mild accumulation with consecutive htly ingestion. It is quite similar in many respects to azepam (Serax) which attains a peak blood level in out two and one-half hours, and has a half life of about hours. Another desirable characteristic of both of se drugs is that they are inactivated by conjugation, king them more preferable in the elderly or the cir- otic than other benzodiazepines, which are inacti- ed by oxidation.[19] Temazepam will be marketed in future in a more rapidly absorbed form using a soft atin capsule.

riazolam (Halcion) is fairly rapidly absorbed with ak levels being reached in one and one half hours. It is o very rapidly cleared, having a half life of about three urs.[20] Therefore, it induces sleep fairly quickly, but y cause early morning awakening. Patients who are anged over from a long-acting hypnotic to triazolam y experience early morning awakening and daytime xiety. Midazolam will be introduced as an intravenous esthetic premedication and in an oral hypnotic form ich has pharmacokinetics similar to those of tria- lam.[19]

When short-acting benzodiazepine hypnotics are dis- ntinued abruptly, the patients may experience bound insomnia,[22,23] which may be more severe than insomnia originally treated. It resolves in a few days d should not be used as a justification for prolonging treatment course.

Questions are often asked about the use of over-the- unter sleeping aids. These usually contain antihista- nes such as pyrilamine or diphenydramine and ticholinergics such as scopolamine.[15] Their efficacy is rginal,[2] their safety margin moderate and varying cording to their contents, and their list of side effects rly long and also variable, including daytime somno- nce, depression, dry mouth and blurred vision.

A final comment should be made about the use of tricyclic antidepressants as hypnotics. This practice should be discouraged for many reasons including: 1) they can cause transient insomnia, 2) their hypnotic dosage is unknown and obviously variable, 3) cardiotoxicity is a serious side effect and 4) a narrow margin exists between their therapeutic doses and lethal overdosages. Tricyclic antidepressants should be prescribed when appropriately indicated as for example by the existence of depression at which time an associated insomnia may resolve.[24]

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Obstetrics &
Gynecology

Successful Management of Postpartum Vaginal Hemorrhage by Angiographic Embolization

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Editors:
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Introduction

Severe postpartum hemorrhage often presents a diagnostic and therapeutic challenge to the physician to determine the source and select the appropriate management. Recent advances in angiographic techniques and equipment have provided the means to obliterate small bleeding arteries through embolization. This method was used successfully to treat a patient with severe postpartum hemorrhage due to vaginal laceration. In this case, surgical therapy consisting of ligation of the internal iliac artery would probably not have been effective.

Case History

An eighteen year old primipara was admitted to Go
Samaritan Medical Center from an outlying hosp
with uncontrollable postpartum vaginal bleeding
twelve hours' duration. During the next four days
patient had three operative attempts to control her va
nal bleeding which appeared to originate from a lace
tion in the right vaginal wall. Her course was furt
complicated by severe preeclampsia and disseminat
intravascular coagulopathy. In the course of her thera
55 units of packed cells, 160 units of fresh frozen plasr
15 units of platelets, 15 units of cryoprecipitate and
units of fresh frozen plasma were administered.

On the fourth day, the patient had a selective ri
internal iliac angiogram via a left transfemoral approa
This study demonstrated a bleeding site in the vagi
wall on the right. (Figure 1). Vasopressin at a rate of
units per minute was infused into the right internal il
artery through the angiographic catheter in an atten
to induce vasospasm, which would decrease blood fl
and promote clot formation at the bleeding site. T
infusion induced severe cramps, causing the patient
bear down and expel a vaginal pack. This precipitat
fresh, brisk bleeding. The right internal iliac artery w
quickly embolized with three 5 mm. coils. T
maneuver did not appear to affect the rate of bleedi
and the patient was taken to the operating room, whe
another attempt was made to suture the bleeding s

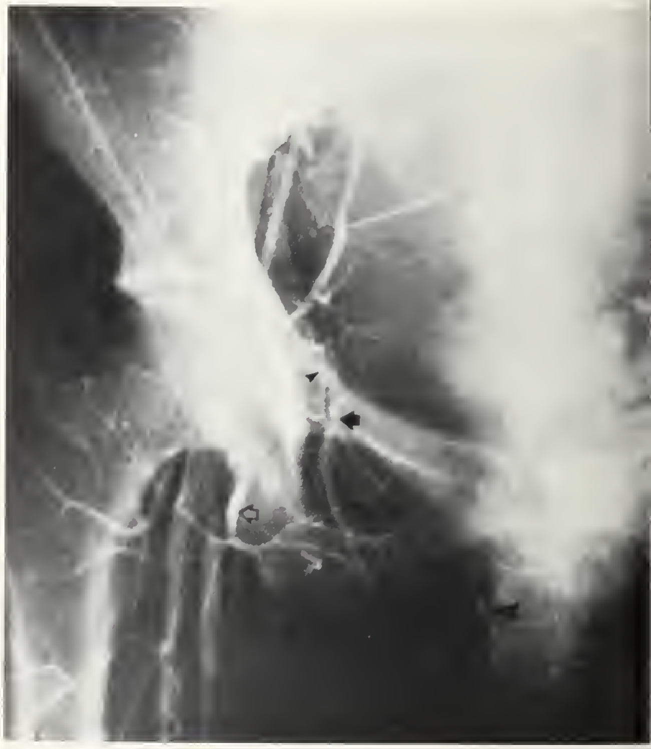

Figure 1
Right common iliac angiogram demonstrating bleeding si
(large arrowhead) in lateral vaginal wall supplied by collatera
from internal pudendal (solid arrow), inferior epigastric (sm
arrowhead) and medial femoral circumflex (open arrow).

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the vagina was repacked. Within twelve hours, the
eding had recurred, necessitating a repeat angiogra-
c examination. A right common iliac injection
wed successful occlusion of the right internal iliac
ery but the bleeding site was still active through col-
eral arteries from the medial circumflex artery, a
nch of the profunda femoris. This artery was selec-
ely catheterized and embolized with coils and Gel-
m. A postembolization angiogram showed that there
re now collaterals supplying the bleeding site from a
nch of the right inferior epigastric artery. This artery
s selectively catheterized and embolized with Gel-
m particles. A follow-up angiogram (Figure 2)
wed no further bleeding. As a precaution, the left
ernal iliac artery was also embolized with coils. The
ient's hemorrhage immediately ceased and the dis-
inated intravascular coagulopathy resolved. Follow-
vaginoplasty was performed the following day, at
ich time no ischemia was observed in the vaginal wall.
er examination of the patient confirmed a satisfactory
ult from the vaginal repair.

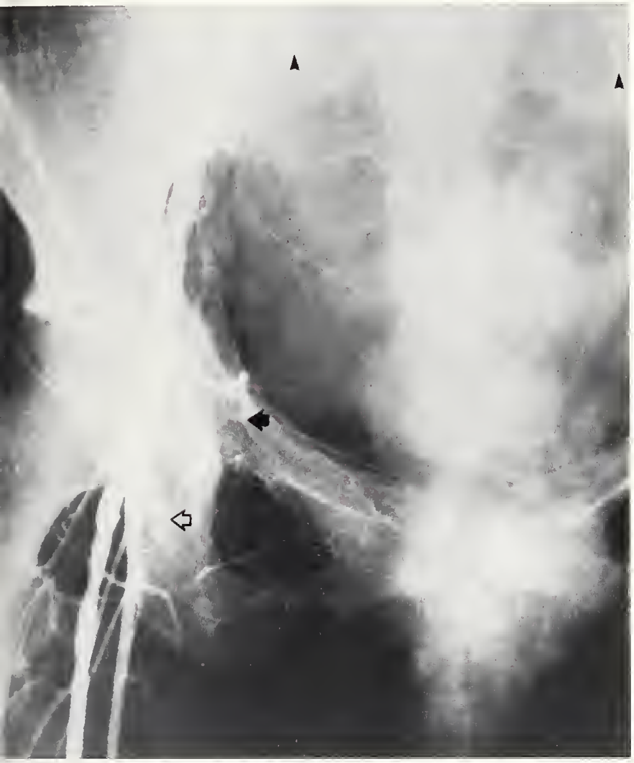

Figure 2

tembolization, no further extravasation is present. Note ls in both internal iliac arteries (small arrowheads), coils in dial femoral circumflex (open arrow) and Gelfoam plug in a jor branch of the inferior epigastric artery (solid arrow).

cussion

Major bleeding from postpartum vaginal tears can
ally be treated by oversewing or ligating the bleeding
ery. If this maneuver is not successful, more aggres-
therapy such as extensive surgical dissection of the
vis to identify the bleeding site or internal iliac artery
ligation has been recommended.[1] The surgical approach would not have been successful in this patient, because embolization of the right internal iliac artery produced the same ineffective result as operative ligation would have.

An alternative approach to the treatment of pelvic hemorrhage is transcatheter control of bleeding arteries. Transcatheter embolization or vasopressin infusion has been used successfully in the control of hemorrhage after pelvic trauma and in the vessels of the gastrointestinal and urinary tracts. Transcatheter control of postpartum hemorrhage by embolization or infusion has been described previously.[2-5] Vaginal hemorrhage represents a special problem in that there are multiple collateral vessels from the common femoral and profunda femoris arteries. Consequently, surgical ligation of the internal iliac artery may not be successful in the treatment of vaginal hemorrhage.[6]

Transcatheter infusion or embolization provides a viable, less invasive alternative to the traditional surgical approach. The advantages of angiographic control of hemorrhage over other forms of therapy are: a) the bleeding site can be identified; b) the artery causing the bleeding may be embolized or infused and cessation of hemorrhage confirmed; c) collateral pathways can be detected and embolized if necessary. The disadvantages of a surgical approach to vaginal hemorrhage include: a) specific bleeding sites are often impossible to identify at surgery; b) difficulty in identifying tissues because of the hemorrhage predisposes to injuring structures such as ureters, bladder and rectum; c) the possibility that a hysterectomy may need to be performed because the bleeding site cannot be identified.

It is presently unclear whether there is an advantage of transcatheter vasopressin infusion or embolization. Vasopressin infusion was attempted first because it does not cause irreversible occlusion of the arteries. When this failed, embolization was used as the next alternative. At this time, it is debatable which method should be tried first, but it seems prudent to choose vasopressin initially because it is the less invasive approach and if this fails, to proceed with embolization.

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Oncology/
Hematology

Overview of Non-Cutaneous T-Cell Malignancies

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Introduction

T-lymphocytes lack B-surface markers, spontaneously rosette sheep erythrocytes (ER+), and react with T-cell heteroantisera or specific anti-T-monoclonal antibodies (T+). The vast majority of lymphoid malignancies are of B-cell origin, but T-cell neoplasms, reflecting the spectrum of T-lymphoid differentiation from immature thymocytes to mature helper or suppressor lymphocytes, have been described.[1] (See Figure 1.) The non-cutaneous T-cell malignancies are outlined in this article and include: 1) T-cell acute lymphoblastic leukemia ALL); 2) lymphoblastic lymphoma (LL) of convolute nonconvoluted type; 3) T-cell chronic lymphoc leukemia (T-CLL) and T-cell prolymphocytic leuke (T-PL); 4) T-cell hairy cell leukemia (T-HCL); and 5) T- leukemia-lymphomas, including human T- leukemia-lymphoma virus (HTLV) associated disord Because immunologic studies are not always rea available, one should be familiar with the clinical histologic features that suggest the diagnosis of a T- leukemia or lymphoma, since recognition of these orders has implications for the treatment and progn of affected patients.

T-Cell Acute Lymphoblastic Leukemia (T-ALL)

T-ALL comprises 20% to 25% of childhood ALL.[2] Co pared with the more common non-B, non-T ALL, i characterized by the following: 1) age usually grea than five years; 2) male predominance; 3) higher wh blood cell (WBC) counts (often >100,000/mm^3); and presence of an anterior mediastinal mass in appro mately 50% of patients. Hepatosplenomegaly and ly phadenopathy are common. Fifteen to twenty perc of adult ALL is of the T-cell type and the clinical featu are similar to those of childhood T-ALL.[3]

Morphologically, the lymphoblasts are classified as or L2 in the French-American-British (FAB) classificati and are indistinguishable from those in non-B, nor ALL. Immunologically, T-ALL is heterogeneous. All T+, but some are ER- (pre-T-ALL), and some lymphoblasts have common ALL and/or Ia-like antige Phenotypically, 80% of T-ALL cases are composed immature thymocytes, with the remainder composed common thymocytes and very rarely mature thym cytes.[4]

The clinical features associated with T-ALL were r ognized as unfavorable prognostic factors in ALL bef immunologic typing became available, but T-cell ori is probably an independent prognostic factor.[5] Wheth or not prognostic differences exist between immun logic subtypes of T-ALL is unknown. In most series, ALL patients have a remission rate (approximately 90% children and 70% in adults) similar to that of non- non-T-ALL patients with standard treatment, but rela earlier (median of 12 months versus 45 months in o study [5] and often in extramedullary sites (testic central nervous system [CNS]).

Lymphoblastic Lymphoma (LL)

In 1975 Barcos and Lukes identified LL as a uniq histologic and clinical subset of non-Hodgkin's ly phoma (NHL) and suggested that it was of T-cell origi Prior to that time, most cases had been classified diffuse poorly differentiated lymphocytic lympho and less often as other diffuse histologies of the Rapp port system.[7] The histologic findings in LL are usua distinguishable from other lymphomas, with the nod being diffusely involved by noncohesive pleomorp cells with convoluted or nonconvoluted nuclei, fi homogeneous chromatin, small, nonprominent nucl

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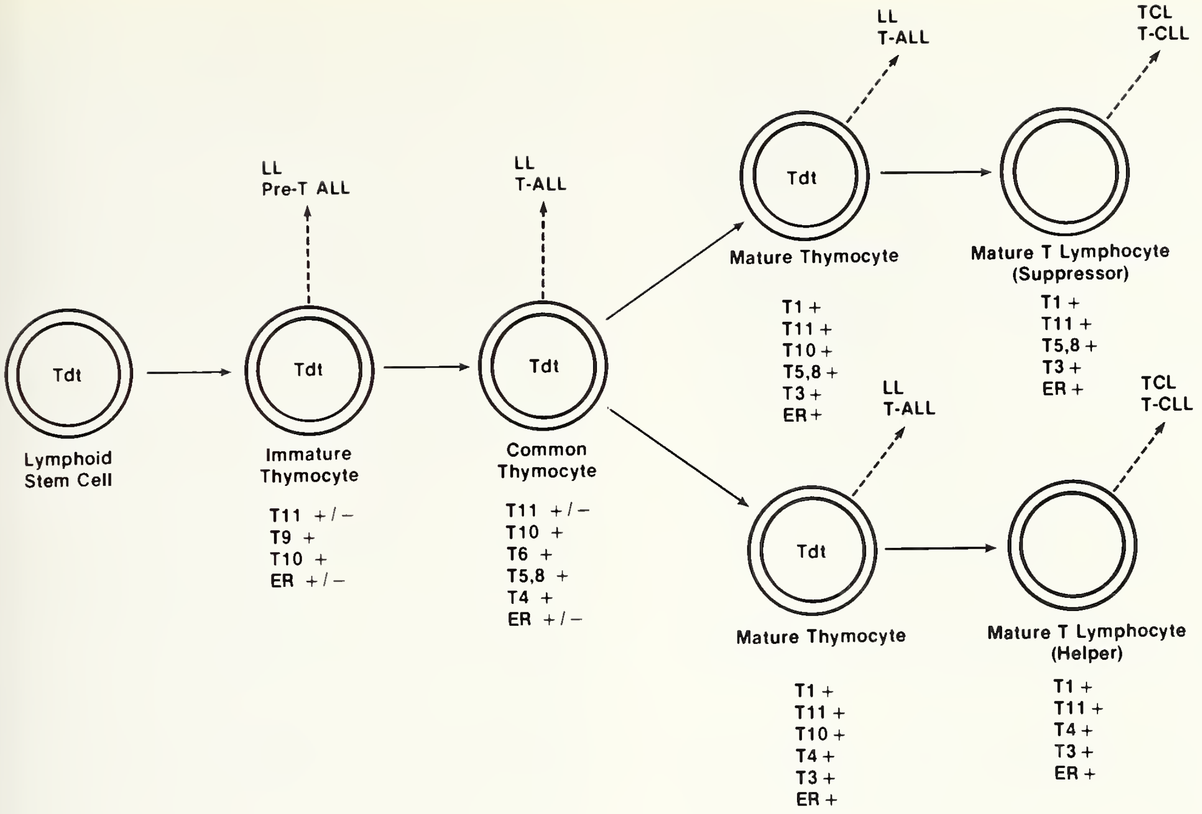

Figure 1
Scheme of T-lymphoid differentiation showing phenotypes and relationship to noncutaneous T-cell malignancies. OKT antibodies are represented as T1, T3, T6, T8, T10, T11. Tdt, terminal deoxynucleotidyl transferase; ER, sheep erythrocyte rosette; LL, lymphoblastic lymphoma; ALL, acute lymphoblastic leukemia; CLL, chronic lymphocytic leukemia; TCL, T cell leukemia/lymphoma. (Modified from Foon et al, 1982.)

scant cytoplasm, ill-defined cell borders, and numer- s mitoses. Cells in single-file arrangement, invasion of sel walls, and crush artifact are also characteristic.[6,7] L comprises 33% of NHL in children[8] and 5% of NHL adults.[9] Characteristic features include: 1) predomi- ntly older children or young adults; 2) male predomi- nce of 2:1; 3) anterior mediastinal mass in 50% to 75%, en causing symptoms due to superior vena cava syn- ome, tracheal obstruction, and pleural effusions; 4) neralized lymphadenopathy in more than 50% of ients; 5) absent or only mild constitutional symptoms approximately 50%; 6) bone marrow involvement h or without peripheral blood involvement in at least 6 at diagnosis and progression to a leukemic picture most; and 7) high frequency of central nervous system % to 20%) and gonadal (5%) involvement, especially relapse. The incidence of mediastinal masses and leu- mic conversion is higher in younger patients (less than years of age). There are no clinical differences tween the convoluted and nonconvoluted nuclear es of LL.[7]

ince LL and T-ALL share several clinical features and ir lymphoblasts are morphologically indistinguish- e, the differentiation between leukemic conversion LL versus de novo T-ALL is sometimes difficult. Clinically, differentiation is based on initial extent of bone marrow and peripheral blood involvement. Immunologically, LL (80% are T-cell phenotype) and T-ALL are separate entities. LL is usually composed of common or mature thymocytes, while T-ALL is usually composed of immature thymocytes.[4]

Recognition of LL as a subgroup of NHL is important, as these patients fare poorly with conventional chemotherapy regimens for lymphomas, i.e., COP, CHOP, CHOP-Bleomycin.[6,7,9] (See end of text for explanation of abbreviations for drug combinations.) Although dramatic responses are frequently seen, they tend to be of brief duration with systemic and CNS relapses, and median survival has ranged from approximately 8 to 15 months in the literature. The addition of other drugs (cytosine arabinoside, L-asparaginase, methotrexate, etc.) and the use of ALL-like protocols, with induction-consolidation-maintenance regimens and CNS prophylaxis, have yielded superior results in several recently reported studies.[8,10-12] It is important to begin CNS prophylaxis with intrathecal chemotherapy at diagnosis; but whether or not the addition of cranial radiation or radiation to mediastinal masses or other bulky disease improves long-term survival is unknown.

T-Cell Chronic Lymphocytic and Prolymphocytic Leukemias (T-CLL and T-PL)

T-CLL, comprising approximately two percent of CLL cases,[13] presents as a distinctive clinical picture with: 1) massive splenomegaly; 2) unimpressive lymphadenopathy; 3) dermal infiltration; 4) moderate peripheral blood and bone marrow lymphocytosis with the peripheral lymphocytes having abundant cytoplasm and numerous azurophilic granules; and 5) neutropenia and anemia unexplained by the degree of lymphoid marrow infiltration or hypersplenism. Thrombocytopenia and hypogammaglobulinemia are rare. Immunologically T-CLL is variable. Although usually composed of mature T lymphocytes of suppressor phenotype,[14] a number of other phenotypes have been recognized. Whether T-CLL differs in clinical course from the more frequent B-CLL is unclear, but for the most part it appears to be indolent, except for infections secondary to the neutropenia.[14] Five cases of T-PL have been reported, but these have not differed in clinical or hematologic parameters from the more common B-cell prolymphocytic leukemias.[15]

T-Cell Hairy Cell Leukemia (T-HCL)

There have been five case reports of T-HCL since 1978, detected only by immunologic screening, as they had no distinguishing clinical or morphologic features compared with B-cell HCL.[16] Of interest is that one case, comprised of mature helper T-lymphocytes, was associated with a type of HTLV.[17]

T-Cell Leukemia-Lymphomas

This is a heterogeneous group, comprised of diffuse lymphomas (diffuse mixed, diffuse histiocytic, and diffuse undifferentiated lymphomas), with marked clinical and histologic diversity. However, in general, they are characterized by the following: 1) middle-aged or older adults with equal male-to-female ratio; 2) generalized adenopathy, often with hepatosplenomegaly; 3) frequent "B" symptoms; 4) prominence of extranodal involvement; and 5) pleomorphic cells often with convoluted nuclei. Several different clinicopathologic types have been described that vary in their extranodal involvement, histology, and clinical course.

Waldon et al. described six patients with rapid onset of constitutional symptoms and lung/pleura as their extranodal site of involvement.[18] Histologically, the malignant cells were pleomorphic with prominent nuclear folding, prominent nucleoli, sharply defined cell borders, and a variable number of mitoses. Prominent capillary proliferation, clusters of macrophages, and the appearance of compartmentalization by delicate collagen bands were also noted. All cases were ER+. Despite treatment with COP-BCNU, prognosis was poor, with an average survival of only nine months.

Pinkus et al, described what they termed "large, multilobated T-cell lymphomas" in 14 patients, although only four had immunologic studies done (ER+).[19,20] Again, patients were characterized by extranodal involvement: skin, CNS, bone, lung, bone marrow, and gonads. However, they differed from Waldron's cases clinically and
histologically. Cells were pleomorphic with promin
nuclear lobulations ("mulberry or clover-leafed
indistinct nucleoli, fine chromatin, poorly defined
borders, and frequent mitoses. Clinically, the onset
symptoms was indolent and the majority of patie
were in a complete remission at two years with combi
tion chemotherapy (i.e., M-BACOD or C-MOPP).

Another unique T-cell neoplasm, adult T-cell leuk
mia/lymphoma, was first described in 1977 in Japan
patients born on the southwestern islands of Kyushu a
Shikoku[21] and then in blacks who had migrated from t
West Indies to Britain.[22] Similar cases have be
reported in blacks born in the southeastern Unit
States, as well as in patients originating in other areas
the United States, South America, and Israel.[23,24] In ge
eral, cases have been characterized by: 1) promine
extranodal involvement (skin [intradermal or subc
taneous], liver, spleen, bone marrow, bone, CNS, lu
and gastrointestinal tract); 2) WBC counts ofte
>100,000/mm^3 with circulating malignant cells; and
hypercalcemia. An unexplained disorder in bo
metabolism is suggested by the hypercalcemia, elevat
alkaline phosphatase, lytic bone lesions that are oft
negative for tumor on biopsy, and generalized increa
in tracer uptake on bone scans. The clinical cou
ranges from subacute to chronic, with a rapidly progre
sive terminal phase. Remissions occur with chemothe
apy (CHOP, COMLA, ProMACE/MOPP) but a
generally not sustained.[22-24] There is no pathognomon
histologic feature, but the malignant cells are oft
pleomorphic with nuclear lobulations. They are ER+ a
most often of mature T-helper phenotype, but parado
cally have been reported to suppress B-cell immunogl
bulin secretion.[22,23]

The adult T-cell leukemia/lymphomas have proven
be of great interest because of their association with
retrovirus, designated human T-cell leukemia/ly
phoma virus (HTLV).[25] HTLV is acquired and is T-c
trophic, particularly for helper cells.

An infectious etiology for adult T-cell leukemia/ly
phoma was initially suggested by the clustering
patients' birthplaces. The etiologic role of HTLV is su
ported by epidemiologic studies, which suggest dire
transmission, probably requiring prolonged intima
contact.[26,27] Eighty-seven percent of Japanese and 100
of Caribbean and southeastern United States patier
have antibodies to HTLV. Forty-seven percent of rel
tives of Japanese patients and 20% of relatives of Cari
bean patients are also antibody positive, while 12%
healthy donors in endemic areas of Japan, and 4% ar
2% of healthy black donors in the Caribbean and sout
eastern United States, respectively, are antibody pos
tive. In contrast, the incidence of antibody positivity
less than 1% in nonendemic areas of Japan, the Unite
States, and Europe.

Finally, the association of HTLV with adult T-ce
leukemia/lymphoma is of interest because of reports
the virus and antibodies to it being detected in son
patients with acquired immunodeficiency syndron

DS), a disorder characterized by an absolute decrease
helper cells.[28] Whether HTLV represents only one of
ny opportunistic infections affecting these patients or
an etiologic role is unknown.

nclusion

-cell neoplasms comprise only a small fraction of
phoid neoplasms, but their recognition has proven
ortant for several reasons. First, their phenotypic
ability has allowed better definition of normal lym-
id differentiation, as they mirror the phenotypes of
mal lymphocytes. Second, immunologic studies,
nbined with clinical and histologic features, have
ned subgroups of leukemia/lymphoma that differ in
ase manifestations and clinical course. Third, a retro-
s has been associated with a particular T-cell neo-
m, adult T-cell leukemia/lymphoma, suggesting an
ctious etiology.

lanation of Abbreviations:

P—cyclophosphamide, vincristine, and prednisone
OP—cyclophosphamide, doxorubicin, vincristine,
prednisone
3ACOD—methotrexate, bleomycin, doxorubicin,
ophosphamide, vincristine, and dexamethasone
1OPP—cyclophosphamide, vincristine, procarba-
, and prednisone
MLA—cyclophosphamide, vincristine, methotrex-
with leucovorin rescue, and cytarabine
MACE/MOPP—prednisone, methotrexate, doxoru-
n, cyclophosphamide, and Etoposide® alternating
mechlorethamine, vincristine, procarbazine, and
dnisone

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Psychiatric Disorders

Expectations: Part Two

Saving Face

William B. McGrath, M.D.

Editor:
Thomas E. Bittker, M.D.

Some identities are assigned to us and they are constantly changing: student, parishioner, tenant, soldier, taxpayer. We also assume a variety of roles: employer, landlord, patient or client, repairman, pastor, teacher, friend, and so forth. For each of these identities and roles there are expectations, and it is a function of society to define them and to keep them within reasonable limits. Whatever costume or uniform one may be wearing, it does represent an ensemble of expectations.

In this matter there are major cultural and political differences. Democracies disparage the social stratifications of caste systems or totalitarian regimes. The clotting of people in great cities (New York, London, Rome, Hong Kong) calls for innumerable written and unwritten rules of accommodation. And this contrasts with the laissez faire of the frontier or small town. The Caucasian does not envision quite such a sensuous invitation to paradise as beckons the soldier of Islam or the kamikaze pilot. Discharge your duty or die: The contract may not be as articulate but is no less binding in the West.

Parental guidance, religious sanctions, law, custo
general —if society fails to delineate the responsibil
of a given role, then the individual has to make up
own. This is a source of needless insecurity and conf
Any relationship or organization pays a heavy pen
when obligations and privileges are formless and va
A soldier or priest or policeman or judge, comfort
depersonalized in his uniform, can "go by the bo
How quickly any game or contest or parliamen
meeting would degenerate if the rule books faile
address every conceivable contingency.

Blurring of expectations is most unfortunately cha
teristic of marriage. The institution of marriage, wit
microcosmic crowding and cabin fever, is like a big
and should have spelled out in advance all the feat
of a modus vivendi. Sacramental vows to love, honor
obey provide no operational instructions for the sir
est everyday adjustments. An example would be
question of budget and comparative spending, e
where answered in the most pedestrian of job desc
tions.

Most beneficial of all would be a prenuptial and v
clear policy on the matter of criticism and unsolici
advice. Endogenous in marriage seems to be one par
habit of finding fault with the other. Unrelaxed antici
tion of disapproval is one of the most corrosive stres
in psychosomatic diseases and neuroses, in divorce
alcoholism and suicide. (Conscientious members
Alcoholics Anonymous, incidentally, are the peo
who can seldom be inveigled into making critical ju
ments or offering uninvited counsel. Would that
knew their secret!) By the same token it is no won
that we dote on grandchildren or pets, and they on
our affection is free to be wholehearted because exp
tations and ambivalence are mutually wanting.

Now almost any role or identity shapes up as
proximal half of a relationship. There is no teacher wi
out a student; there is no husband without a wife; th
is no prosecutor without a defendant.

Inherent in every relationship is the element
accountability. This is the source of ambivalence,

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e of all relationships. With anyone in our orbit and ard whom we feel in any way accountable we have flicting emotions of acceptance and rejection. As a reciprocating engine, ambivalence anticipates ivalence and thereby provokes it.

his, by the way, is the bewildering inducement of tuation, as distinguished from mature love. When a has an affair it almost always involves someone rally and culturally inferior to his own spouse. The nmonness of the other woman lowers the expecta- ns, diminishes the likelihood and gravity of mutual ppointment. Expecting less of his mistress, the man sumes that she expects less of him; and, in turn and re importantly, he expects less of himself in the rela- nship. The injured wife may then proclaim her own questionable virtues, not realizing that her very rthiness may have come to seem like a burdensome nand on her husband to measure up.

or the same reason an individual may be quite chur- at home but generous and charming among uaintances and strangers; the "life of the party." Or ness the astonishing politeness of our offspring when ing in other households where they feel relatively of accountability.

is accountability that imposes the risk of losing face. older slang a worthless individual was a "no ount.")

he word, shame, as in shamefaced, is probably a cing of the vulgar term for feces. (We mince words, illustration, when we say "gosh darn" or "jiminy kets" (Jesus Christ) in lieu of rank blasphemy.) The me-on-you gesture of the child is the symbolic flick- of feces from the index finger into the victim's face.

ortification is an even more telltale word. It means rosis, whether of the body or spirit or both. Any lic or significant loss of dignity and self-respect will kle and fester until it finally results in some kind of grene.

oss of face or the threat of losing face is a major rce of psychosomatic disease and such disorders as ochondriasis and depression and paranoia. Either fear or the fact of losing face is surely the main cause uicide. "I had rather die than . . . "

n elderly gentleman could not be disabused of the ion that he had serious heart trouble. Careful evalua- failed to demonstrate any abnormality. He pro- ed the demeaning inference that he was (just) a ochondriac. What was wrong? He desperately eded the diagnosis of heart disease to ward off threats umiliation and physical abuse by a burly and bullying oson. A similar need of frail vulnerability and defen- essness is commonly seen in weaker animals and nger siblings and battered wives.

Comparable is the autosuggestion of physical or men- disability, rather than cowardice, to excuse one from nscription or combat. Or; the spouse who lacks the to ask for divorce will first "plea bargain" with God society and his own conscience: "See how sick I am becoming; I really have no choice but to get out." Again; "I realize I am doing wrong but please observe that I am not enjoying it."

Intrinsic in all neuroses are so-called factors of secondary gain. The defense mechanisms (repression, condensation and displacement, conversion, sublimination, projection, etc.), all represent incompletely successful struggles to save face; all are attempts to deny or displace guilt and shame.

The issue, how not to lose face, poses a paradox and a dilemma. We cannot function (or play) without rules. But when the rules are too elaborate we become mechanized, like insects, and we sacrifice creativity and progress and joy. At heart most of us want to be free-spirited, resisting regulation, yet rationally and socially we know that a libertarian approach just does not work. Unfortunately we need more and more regulation to cope with over population, urbanization, mechanization, crowding, specialization and interdependency. Witness the worn-out elastic of the criminal law when the judge is given too much discretion in sentencing. Witness the chaos of deregulation in industry.

Both for the governing and the governed it is advantageous for regulations to seem as impersonal as possible. The principle is equally applicable to expectations and obligations and responsibilities. The professional man or expert who takes too much personal credit for successful results will have to accept personal blame and chagrin for inevitable failures; and you will recall that the anticipation of criticism is one of the most malignant kinds of stress. One might be reminded, too, that criticism is invited by injudicious asking of advice.

In any of our different roles we can no longer afford slipshod inventory: To whom one is really accountable and for precisely what and to what extent, and what are the profits and penalties? If our friendship, for example, confers on you the right to jealousy or possessiveness or fault finding, then never mind!

The philosopher, Immanuel Kant, tried to create a general formula of ethics and morality for people living in relationships and in society. His first so-called categorical imperative is just a German obfuscation of the Golden Rule: Do unto others as you would have them do unto you. His second categorical imperative is worded: "Act only on that maxim through which you can at the same time will that it should become a universal law." This can be reduced to a very simple question: What if everybody did it? And this will decide the rightness or wrongness of behavior in any set of circumstances. What if everybody ignored the traffic lights or pushed to be first in line or threw garbage out the window?

It is interesting that we conclude our article on saving face with a touch of embarrassment, a fear of sounding sanctimonious. Almost entirely ignored in psychology texts and in articles on stress is the most essential safeguard of all; namely, virtue. The person who lives by the rules and doesn't even think of cheating is a thousand times removed from the terrible threat of losing face.

Radiology

Case of the Month No. 72

Continued on page 5

James J. Dearing
Jonathan M. Levy, M.D.
Peter H. Herwick, M.D.

Editor:
Jonathan M. Levy, M.D.

A 33-year-old man complained of right hip pain after exercise. A film of his pelvis and hips (Figure 1) was obtained.

What is the diagnosis?

How would you treat this patient?

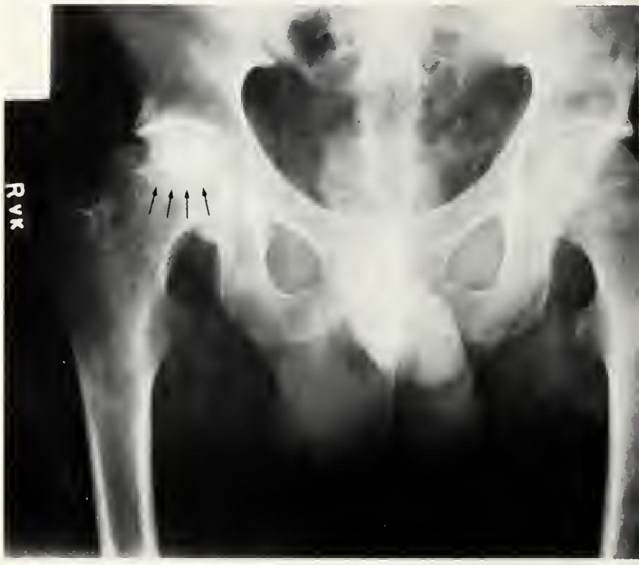

Figure 1
Note right hip (arrows).

From: The College of Osteopathic Medicine of the Pacific (JJD), and the Departments of Diagnostic Radiology (JML) and Orthopedic Surgery (PHH), Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251.

ore prescribing, see complete prescribing information in
&F CO. literature or *PDR*. The following is a brief summary.

/ARNING
his drug is not indicated for initial therapy of edema or
ypertension. Edema or hypertension requires therapy
rated to the individual. If this combination represents the
osage so determined, its use may be more convenient in
atient management. Treatment of hypertension and edema
not static, but must be reevaluated as conditions in each
atient warrant.

ntraindications: Concomitant use with other potassium-
ring agents such as spironolactone or amiloride. Further use
nuria, progressive renal or hepatic dysfunction, hyperkalemia.
-existing elevated serum potassium. Hypersensitivity to either
nponent or other sulfonamide-derived drugs.

rnings: Do not use potassium supplements, dietary or other-
e, unless hypokalemia develops or dietary intake of potas-
n is markedly impaired. If supplementary potassium is
ded, potassium tablets should not be used. Hyperkalemia
occur, and has been associated with cardiac irregularities. It
nore likely in the severely ill, with urine volume less than one
/day, the elderly and diabetics with suspected or confirmed
al insufficiency. Periodically, serum K$^+$ levels should be deter-
ned. If hyperkalemia develops, substitute a thiazide alone,
rict K$^+$ intake. **Associated widened QRS complex or arrhyth-**
requires prompt additional therapy. Thiazides cross the
cental barrier and appear in cord blood. Use in pregnancy
uires weighing anticipated benefits against possible hazards,
uding fetal or neonatal jaundice, thrombocytopenia, other
erse reactions seen in adults. Thiazides appear and tri-
terene may appear in breast milk. If their use is essential, the
ent should stop nursing. Adequate information on use in
dren is not available. Sensitivity reactions may occur in
ents with or without a history of allergy or bronchial asthma.
sible exacerbation or activation of systemic lupus erythe-
losus has been reported with thiazide diuretics.

cautions: Do periodic serum electrolyte determinations (par-
larly important in patients vomiting excessively or receiving
enteral fluids, and during concurrent use with amphotericin B
corticosteroids or corticotropin [ACTH]). Periodic BUN and
um creatinine determinations should be made, especially in
elderly, diabetics or those with suspected or confirmed renal
ufficiency. Cumulative effects of the drug may develop in
ents with impaired renal function. Thiazides should be used
caution in patients with impaired hepatic function. They can
cipitate coma in patients with severe liver disease. Observe
ularly for possible blood dyscrasias, liver damage, other idio-
cratic reactions. Blood dyscrasias have been reported in
ents receiving triamterene, and leukopenia, thrombocyto-
iia, agranulocytosis, and aplastic and hemolytic anemia have
en reported with thiazides. Thiazides may cause manifestation
atent diabetes mellitus. The effects of oral anticoagulants may
decreased when used concurrently with hydrochlorothiazide;
sage adjustments may be necessary. Clinically insignificant
uctions in arterial responsiveness to norepinephrine have
en reported. Thiazides have also been shown to increase the
alyzing effect of nondepolarizing muscle relaxants such as
ocurarine. Triamterene is a weak folic acid antagonist. Do
iodic blood studies in cirrhotics with splenomegaly. Anti-
pertensive effects may be enhanced in post-sympathectomy
ients. Use cautiously in surgical patients. Triamterene has
en found in renal stones in association with the other usual
culus components. Therefore, 'Dyazide' should be used with
ution in patients with histories of stone formation. A few occur-
ces of acute renal failure have been reported in patients on
azide' when treated with indomethacin. Therefore, caution is
vised in administering nonsteroidal anti-inflammatory agents
n 'Dyazide'. The following may occur: transient elevated BUN
creatinine or both, hyperglycemia and glycosuria (diabetic
ulin requirements may be altered), hyperuricemia and gout,
italis intoxication (in hypokalemia), decreasing alkali reserve
n possible metabolic acidosis. 'Dyazide' interferes with fluores-
nt measurement of quinidine. Hypokalemia is uncommon with
azide', but should it develop, corrective measures should be
en such as potassium supplementation or increased dietary
ake of potassium-rich foods. Corrective measures should be
tituted cautiously and serum potassium levels determined.
continue corrective measures and 'Dyazide' should labora-
y values reveal elevated serum potassium. Chloride deficit
ly occur as well as dilutional hyponatremia. Concurrent use
h chlorpropamide may increase the risk of severe hypo-
tremia. Serum PBI levels may decrease without signs of thyroid
turbance. Calcium excretion is decreased by thiazides.
azide' should be withdrawn before conducting tests for para-
roid function.

iazides may add to or potentiate the action of other antihyper-
isive drugs.

uretics reduce renal clearance of lithium and increase the risk
ithium toxicity.

verse Reactions: Muscle cramps, weakness, dizziness, head-
he, dry mouth; anaphylaxis, rash, urticaria, photosensitivity,
rpura, other dermatological conditions; nausea and vomiting,
rrhea, constipation, other gastrointestinal disturbances; pos-
al hypotension (may be aggravated by alcohol, barbiturates,
narcotics). Necrotizing vasculitis, paresthesias, icterus,
ncreatitis, xanthopsia and respiratory distress including pneu-
onitis and pulmonary edema, transient blurred vision, sialade-
is, and vertigo have occurred with thiazides alone. Triamterene
s been found in renal stones in association with other usual
lculus components. Rare incidents of acute interstitial nephritis
ve been reported. Impotence has been reported in a few
tients on 'Dyazide', although a causal relationship has not
en established.

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ngle Unit Packages (unit-dose) of 100 (intended for institu-
nal use only); in Patient-Pak™ unit-of-use bottles of 100.

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J-4044 January 1

Answer: Avascular necrosis of he hip.

Avascular necrosis of the femoral head in the adult is sually seen in the fourth or fifth decade of life, and is iore common in males. It has been reported to be ilateral in 40% to 80% of patients. Many pathologic ntities can result in avascular necrosis. These include lcoholism, pancreatitis, sickle cell anemia, corticosteoid use, rheumatoid arthritis, arteriosclerosis and auma, as well as idiopathic. Whatever the etiology, the ommon pathway is loss of blood supply to the femoral ead.

The radiographic findings are distinctive, and follow ne altered physiology. (Figure 1). Initially, an area of ecrotic bone is seen along the antero-medial aspect of ne femoral head, surrounded by a zone of lucency. This ucent zone represents ingrowth of blood vessels and ibrous tissue, in an attempt at healing. The surrounding one becomes osteoporotic, either due to disuse or yperemia. This makes the necrotic area appear sclerotic, though it has actually not changed in density. ater, the ischemic bone fragments, causing collapse of ne overlying articular cartilage and resultant narrowing f the joint space. Complete collapse of the weight earing dome of articular cartilage and underlying cancellous bone may follow.

Since avascular necrosis of the femoral head rarely eals in adults, some form of treatment is necessary. Non-operative treatment has not been successful. Drilling of the femoral head with bone grafting can be done n early (nontraumatic) avascular necrosis, especially in oung patients. Proximal femoral osteotomy was the rocedure of choice in the era before low friction rthroplasty. Today, many of these patients come to total ip arthroplasty. Our patient had an arthroplasty, and is resently doing well.

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Special Article

A Modest Proposal for Preventing the Medically Indigent of Our State from Being a Burden to Their Family or Fellow Citizens

Norbert L. Dugan, M.D.

With sincere apologies to the late but still lamented Reverend J. Swift, Esq., Dublin

It is a melancholy object to those honorable taxpayers of this state who see the alleys and doorways at offices of humane establishments and other patronage agencies crowded with poor, disabled wretches, many borne on litters, some on crutches, some in rags, importuning

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From: Southwest Regional Center for the Treatment of Spinal Cord Injury, Phoenix, Arizona. Reprint request to Norbert L. Dugan, M.D., Spinal Injury Service, Good Samaritan Medical Center, 1111 East McDowell Road, P. O. Box 2989, Phoenix, Arizona 85062.

every clerk and agent for alms in the form of medicine, viands, or employment. These poor unfortunates, instead of being able to work for their livelihood, are forced to employ their time hobbling from place to place, begging sustenance for themselves and often also for their families.

I think it is agreed by all parties that this prodigious number of disabled medically indigent is in the present deplorable state of the economy a very great additional grievance; therefore whoever could find out a fair, cheap and easy method of making these wretches into sound and useful members of the Commonwealth would deserve so well of the public as to have his statue set up for a preserver of the nation.

But my intention is very far from being confined to provide for only these professed needy, it is of a much greater extent, and shall take in the whole number of medically indigent (not just the lame), who are born into families in effect as little able to support them as those who demand our charity in the streets.

As to my own part, having turned my thoughts for many years upon this important subject, and maturely weighed the several schemes of other projectors, I have always found them grossly mistaken in their computations. It is true that most of our citizens, when stricken by one of those terrible acts of Providence, so as to render them catastrophically poor and/or maimed, may be supported in their needs for one solar year, more or less, with little other sustenance than their hoarded coin, the sale of tangible estate they should possess, and through the value in scraps offered by the many short-term doles and charities and other business of lawful begging; and thus it is exactly at one year that I propose to provide for them in such a manner as, instead of becoming a charge upon their parish or state, or wanting for food, medicine or raiment for the rest of their lives, they shall, on the contrary, contribute to the feeding and partly to the clothing of scores of their grateful, taxpaying fellow countrymen.

The number of souls in our state being usually reckoned one million and a half, of these I calculate there must be many thousands of actual and potential medically indigent and disabled; from which number I subtract those who are by legacy or lottery able to maintain themselves and their families although I apprehend there cannot be so many under the present distresses of the nation, but this being granted there will remain many thousands in total desperation. The question therefore is how this number shall be provided for, which, as I have already said, under the present situation of affairs, is utterly impossible by all the methods hitherto proposed, for we can neither employ them in handicraft or agriculture; they neither build houses nor cultivate land. Their offsprings can very seldom pick up a livelihood by stealing or selling illicit potions and draughts till they arrive at six years old, except when they are of towardly parts; during which time they can however be properly looked upon only as probationers, as I have been informed by a principal gentleman of neighboring county, who protested to me that he neve knew above one or two instances under the age of si even in parts of the state so renowned for the quickes proficiency in that art.

I shall now therefore humbly propose my ow thoughts, which I hope will not be liable to the leas objection.

I have been assured by a very knowing Ommbubong tribesman of my acquaintance from New Guinea, that properly prepared human being is a most deliciou nourishing and wholesome food, whether stewe roasted, baked or boiled; and I make no doubt that it wi equally serve in a fricassee or a ragout.

I do therefore humbly offer it to public consideration that the many thousand medically indigent be offered i sale to the persons of quality and fortune throughout th state, scheduling these sales at the last month of thei dole so they will be plump and fat for a good table wit minimum expenditure for extra fattening. A child, fo instance, will make two dishes at an entertainment fo friends, and when the family dines alone, the fore an hind quarters will make a reasonable dish, and seasone with a little pepper or salt will be very good boiled on th fourth day, especially in winter.

I grant this food will be somewhat dear, and therefor very proper for some lawyers, physicians, and hospita directors, suppliers and insurers who, as they hav already devoured much, seem to have best earned titl to what remains.

Human flesh will be in season throughout the year but more plentiful in March, and a little before an after; for we are told by a grave author, an eminent Iris physician, that fish being a prolific diet, there are mor children born into Catholic households about nin months after Lent than at any other season; therefor reckoning a year after Lent, the markets will be mor glutted than usual, because the number of papist among the group in question is at least three to one i our state.

I have already computed the charge of end-stage fattening (in which list I reckon all cottagers, laborers, an four-fifths of the farmers) to be about four dollars an twenty-six cents per day, rags included; and I believe n gentleman would repine to give at least four dollars an fifty cents the pound for the carcass of a selected specimen, which, as I have said, will make dishes of excellen nutritive meat, when he hath only some particula friend, or his own family to dine with him. Those who ar more thrifty (as I must confess the times require) may fla the carcass; the skin of which artificially dressed, wil make admirable gloves for ladies, and summer boots fo fine gentlemen.

As for our beloved city, shambles may be appointed for this purpose, in the most convenient parts of it, and butchers we may be assured will not be wanting, although I rather recommend buying these humans alive, and dressing them hot from the knife, as we do roasting pigs.

A very worthy person, a true lover of his state, and hose virtues I highly esteem, was lately pleased in scoursing on this manner, to offer a refinement upon y scheme. He said that many gentlemen of this state aving of late destroyed their deer, he conceived that e want of venison might be well supplied by the bodies f certain of the more select, younger specimens, especially those recently completed of high school where so reat a number are in every county being now ready to arve for want of work and service; and these to be isposed of by their parents if alive, or otherwise by their earest relations. But with due deference to so excellent friend, and so deserving a patriot, I cannot be altoether in his sentiments; for as to the males, my Ommbubongian acquaintance assured me from freuent experience that their flesh was generally tough nd lean by continual exercise, like that of our schooloys, and their taste disagreeable and to merely fatten hem would not answer the charge. Then, as to using emales for this purpose, it would, I think with humble ubmission, be a loss to the public, because these would oon become breeders themselves and thereby assure a ontinued market for the future. And besides it is not mprobable that some scrupulous people might be apt o censure such a practice (although indeed very njustly) as a little bordering upon cruelty, which, I onfess, hath always been with me the strongest objecion against any project, howsoever well intended.

But in order to justify my friend, he confessed that this xpedient was put into his head by the famous Sallmaaazor, a native of the Sumatran jungles, who came from hence to our city, above twenty years ago, and in conersation told my friend that in his country when any oung person happened to be put to death, the execuioner sold the carcass to persons of quality, as a prime dainty, and that in his time, the body of a plump girl of ifteen, who was crucified for an attempt to poison the Medicine Man, was sold to His Imperial Majesty's prime minister of state, and other great mandarins of the court, n joints from the gibbet, at four dollars, fifty, the pound.

Some persons of a desponding spirit are in great concern about that vast number of medically indigent and ame who are too aged, too diseased, or too maimed for market, and I have been desired to employ my thoughts on what course may be taken to ease the nation of so grievious an encumbrance. But I am not in the least pain upon that matter, because it is very well known that they are everyday dying, and rotting, by cold and famine, and ilth and vermin, as fast as can be reasonably expected. And as to the younger among the medically indigent and crippled they are now in almost as hopeful a condition. They cannot get work, and consequently pine away for want of nourishment to a degree that if at any time they are accidentally hired to common labor, they have not the strength to perform it, and thus the country and themselves are happily delivered from the evils to come.

I have too long digressed, and therefore shall return to my subject. I think the advantages by the proposal which I have made are obvious and many, as well as of the highest importance.

For first, as I have already observed, it would greatly lessen the number of hopelessly indigent and crippled with whom we are yearly overrun and cannot eternally expect to succeed in exhorting them to transfer, by their own wiles or cleverness, to far off places, like California, or Oregon. Secondly, the poorer families remunerated for their marketable ill and surplus, will have something valuable of their own which by law may be made liable to distress, and help to defray their outstanding medical and legal debentures with the freedom to use any remaining for their personal divertissement.

Thirdly, whereas the maintenance of thousands of medically indigent cannot be computed at less than millions of dollars per annum, the nation's stock will thereby increase accordingly, besides the profit of a new dish, introduced to the tables of all gentlemen of fortune in the state who have any refinement in taste; and the money will circulate among ourselves, the goods being entirely off our own growth and manufacture.

Fourthly, this food would likewise bring great custom to taverns, where the vintners will certainly be so prudent as to procure the best recipes for dressing it to perfection; and consequently have their houses frequented by all the fine gentlemen who justly value themselves upon their knowledge in good eating and will contrive to make it as expensive as they please.

Many other advantages might be enumerated. For instance, the addition of some thousand carcasses in our exportation of barrelled beef, the propagation of swine's flesh, and improvement in the art of making good bacon, so much wanted among us by the great destruction of pigs, too frequent at our tables, which are no way comparable in taste or magnificence to a well-grown and fat human, which, roasted, will make a considerable figure at the Governor's feast or any other public entertainment. But this, and many others, I omit, being studious of brevity.

Supposing that one thousand families in this city would be constant customers for human flesh, besides others who might have it at merry meetings, particularly at weddings and christenings, I compute that our city would take off annually several thousand carcasses, and the rest of the state (where probably they will be sold somewhat cheaper) the remaining number.

I can think of no one objection that will possibly be raised against this proposal, unless, it should be urged that the number of people will be thereby much lessened in the state. This I freely own, and 'twas indeed one principal design in offering it to the world. I desire the reader will observe that I calculate my remedy for this one individual state, and for no other that ever was, is, or, I think, ever can be upon earth. Therefore let no man talk to me of expedients; of taxing our winter guests; of using neither clothes or household furniture except what is of our own growth and manufacture; of utterly rejecting the materials and instruments that promote foreign luxury; of curing the expensiveness of pride, vanity, and idleness; of introducing a vein of parsimony, prudence and temperance; of learning to love our state, wherein we differ even from Texans, and the inhabitants of New Guinea; of quitting our animosities and factions; of being a little cautious not to sell our state and conscience of nothing; of teaching our citizens of quality to have at least one degree of mercy toward their less fortunate neighbors. Lastly, of putting a spirit of honesty, industry and skill into our shopkeepers, our professional gentlemen, and our bureaucratic mandarins.

Therefore, I repeat, let no man talk to me of these and the like expedients till he hath at least some glimpse of hope that there will ever be some hearty and sincere attempt to put them in practice.

But as to myself, having been wearied out of many years with offering vain, idle, visionary thoughts, and at length utterly despairing of success, I fortunately fell upon this proposal, which, as it is wholly new, so it hath something solid and real, of no expense and little trouble, full in our own power, and, whereby we can incur no danger in disobliging our neighboring states. For this kind of commodity will not bear exportation, the flesh being of too tender a consistence to admit to long continuance in salt, although perhaps I could name a country which would be glad to eat up our whole nation without it.

After all, I am not so violently bent upon my own opinion as to reject any offer, proposed by wise men, which shall be found equally innocent, cheap, easy and effectual. But before something of that kind shall be advanced in contradiction to my scheme, and offering a better, I desire the author or authors will be pleased maturely to consider two points: first, as things now stand, how they will be able to find food and raiment for several thousand suffering, useless backs. And secondly, there being several thousand of creatures of human figure throughout this state whose whole subsistence put into a common stock could scarcely pay for one operation, adding those who are beggars by profession, to the bulk of low income farmers and laborers with their wives and children, who are beggars in effect; I desire those politicians who dislike my overture, and may perhaps be so bold to attempt an answer, that they will first ask the families of these maimed and hopeless mortals whether they would not at this day think it a great happiness to have themselves been sold for food in the manner I prescribe, and thereby have avoided such a perpetual scene of mounting misfortune as they have since gone through, the impossibility of paying medical bills, the want of common sustenance, with neither medicine or clothes to protect them from the inclemencies of life and the most inevitable prospect of entailing the like or greater miseries upon their lot forever.

I profess in the sincerity of my heart that I have not the least personal interest in endeavoring to promote this necessary work, having no other motive than the public good of our state, by advancing our trade, relieving the poor, the medically indigent and lame, and giving some pleasure to the rich.

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Editorial

Microcirculation at the University of Arizona

"In our zeal to interpret the importance of the heart and larger vessels, it should never be forgotten that the more obvious phenomena of the circulation are but means through which the real object of maintaining an adequate capillary flow is attained."[1]

The more obvious phenomena Wiggers referred to led William Harvey in 1628 to hypothesize the circulation of the blood from arteries to veins. In so doing he postulated the existence of "porosities of the flesh" to provide a complete circuit. Fifty years later, following the development of the first crude microscopes, Malpighi in Italy and Leeuvenhoek in Holland observed red cells passing through capillaries and terminal branches of the arterial and venous network in the frog lung and tail of the eel. Two centuries passed before the microcirculation came under systematic study *in vivo*. Such studies were hampered by the lack of techniques for quantifying microcirculatory behavior, but despite this, important advances were made by August Krogh in Copenhagen (who received the Nobel Prize in 1920) and Eugene Landis at Harvard.

In the past 20 years a renaissance has occurred in studies of the microcirculation, made possible by development of a variety of quantitative methods for continuously measuring microvessel pressure, diameter and red cell velocity as well as associated methods to determine local oxygen tension in adjacent parenchymal cells. The first scientific society specifically for the study of microcirculation was formed in the U.S. in 1954 and is vigorous and growing. Abroad, new national societies for microcirculation are forming each year. There are now two journals devoted exclusively to the research on microcirculation and a number of others regularly publish papers in the field.

The University of Arizona College of Medicine is part of these developments and is recognized internationally as one of the foremost centers for such studies. The Department of Physiology has developed a strong experimental program under the direction of Drs. Paul Johnson and Robert Gore. Dr. Johnson's studies are examining questions such as the origin of spontaneous vascular tone in the arterioles and have shown that this tone is due to a response of these vessels to their own intravascular pressure as a stimulus. Dr. Gore's studies have shown that fluid exchange occurs more readily across the venous portion of the capillary which has important implications for fluid balance between blood and tissue. Theoretical studies directed by Dr. Joseph Gross of Chemical Engineering and Timothy Secomb of the Arizona Research Laboratory are developing mathematical models of the fluid exchange process in capillaries and the mechanical process which allows 8 micron red cells to pass readily through 4 micron capillaries. Some of the newer methods developed by the group include the surgically isolated single arteriole preparation, *in vivo* monitoring of NADH levels in parenchymal cells, and a detailed computer model of an actual capillary network. Collaboration with other departments has involved the Departments of Anatomy, Internal Medicine, Surgery and the Division of Optical Sciences. A research program on microcirculation at the Tucson Veterans Administration hospital is directed by Dr. Murray Katz, Associate Chief of Staff for Research.

The University of Arizona is home base for a consortium of universities including UC San Diego and the Universities of Houston, Massachusetts and Lehigh which collaborate on microcirculatory studies supported by an NIH program-project grant now in its tenth year.

Microcirculationists at the University of Arizona have played a role in development of this new discipline by serving as officers in national and international organizations. Drs. Johnson and Gross have both served as president of the Microcirculatory Society. The University of Arizona will host the annual meeting of the Microcirculatory Society in Tucson in the Spring of 1985.

In the future, we expect to see further growth of microcirculatory research at the University. Strong support by the College and University administration have been a key ingredient in our prominence in this field.

While the methods used for basic research in this area are not applicable in most instances to clinical investigation, this will no doubt come with time and new initiatives. Already the discoveries from basic microcirculatory studies are reshaping the way we think about peripheral circulatory function and in this way impacting on clinical practice. The University of Arizona plays a leading role in these exciting developments and will continue to do so in the future.

Paul C. Johnson, Ph.D.
Professor and Head
Department of Physiology

Louis J. Kettel, M.D.
Dean

Reference

1. Wiggers CJ: Physiology in Health and Disease. 4th Ed. Lea and Febigen, Philadelphia 1944, p. 545.

Briefly Noted

David S. Alberts, M.D., Tucson, will chair the International Symposium "Cancer Chemotherapy in the 1980s - Focus on Mitoxantrone" to be held at the Monte Carlo Convention Centre October 11-12, 1984. Dr. Alberts is Professor of Medicine and Pharmacology at the University of Arizona and heads the Arizona Cancer Center's studies in anticancer drug pharmacology.

M. Kathleen Carriker, M.D., Phoenix, discussed vision problems on the July *Health Highlights* cable television program sponsored by the Arizona Medical Association.

W. Scott Chisholm, M.D., Phoenix, a member of the Judicial Council of the American Medical Association, was interviewed on the topic of "Ethical Competition" in a recent Audio Medical News presentation prepared by the American Medical Association.

Robert S. Flinn, M.D., Arizona's pioneer cardiodiagnostic physician, was honored at the official dedication of the Robert S. Flinn Department of Cardiodiagnostics at St. Joseph's Hospital and Medical Center. **Donald K. Buffmire, M.D.**, President of the Flinn Foundation's Board of Trustees, cited Dr. Flinn for his dedication to patients and contributions to medicine.

Oscar Hardin, M.D., Chief of Obstetrics and Gynecology at Phoenix Memorial Hospital, was the guest of honor at a surprise reception hosted by family and friends early this summer. The reception featured a presentation to Dr. Hardin of monies raised to equip and furnish a new birthing room and provide furnishings for the nurse midwives' 24-hour quarters at the hospital.

Drs. Earl J. Baker and Oscar Hardin at a reception honoring Dr. Hardin for his many contributions to maternal health in Arizona.

The Arizona Medical Association welcomes the following new members.

Active Members

Apache

Paul F. Bachman, M.D.
Internal Medicine
P. O. Box 457, Ganado
State University of New York
Upstate Medical Center - 1978
William Thomas Fader, M.D.
Family Practice
P. O. Box 457, Ganado
University of Antwerp
Belgium - 1977

Cochise

Stephen E. Lindstrom, M.D.
Pediatrics
101 Cole Avenue, Bisbee
University of Arizona - 1972

Theodore Edward Atkinson, M.D.
Psychiatry
R.W.B.A.H. Pediatrics Clinic
Fort Huachuca
University of Mississippi - 1980
James Forrest Young, M.D.
Obstetrics and Gynecology
302 El Camino Real, Sierra Vista
University of Arizona - 1977

Coconino

Burt R. Erickson, M.D.
General Practice
P. O. Box 2149, Page
University of Colorado
School of Medicine - 1957
Stephen Fuller, M.D.
Orthopedic Surgery
1575 West Highway 89A, Sedona
University of Dublin, 1969

Maricopa

Steven L. Curry, M.D.
Emergency Medicine
1800 E. Van Buren Street, Phoenix
Southern Illinois University - 1979
Stanley Stern, M.D.
Psychiatry/Psychoanalysis
3352 East Camelback Road, Phoenix
State University of New York - 1957
Neil Barnett, M.D.
Orthopedic Surgery
13000 North 103rd Avenue
Suite 58, Sun City
University of Pittsburgh - 1972

Teresita Barnett, M.D.
Internal Medicine and Hematology
13000 North 103rd Avenue
Suite 58, Sun City
University of Santo Tomas
Manila - 1970
Stuart Andrew Biliack, M.D.
Cardiovascular Diseases
Internal Medicine
6707 North 19th Avenue
Suite 208, Phoenix
University of Illinois - 1978
Richard D. Burk, M.D.
Physical Medicine, Rehabilitation
and Radiology
7300 Fourth Street
Suite 113, Scottsdale
Creighton University - 1951
Robert H. Christensen, M.D.
General Practice
7350 Stetson Drive, Scottsdale
University of Nebraska - 1949
Alfred Kenneth Bradshaw, M.D.
Anesthesiology
3030 South Rural Road
Suite 5, Tempe
University of Alberta - 1946
John M. Kelly, M.D.
Obstetrics and Gynecology
2601 East Roosevelt Street, Phoenix
Wayne State University - 1951
David A. Scheer, M.D.
Psychiatry
4232 East Cactus Road, Phoenix
State University of New York - 1959

Susan Rutledge Baker, M.D.
Dermatology
515 West Buckeye Road
Suite 107B, Phoenix
Wayne State University - 1977
Edwardo Vinluan, M.D.
General Surgery
P. O. Box 1533, Wickenburg
Manila Central University - 1967

Luis M. Palacios, M.D.
General Practice
2500 E. Van Buren Street, Phoenix
Universidad de Guadalajara - 1955

Napoleon Ortiz, M.D.
Family Practice
312 North Alma School Road, Chandle
University of New Mexico - 1974
Ramesh Patri, M.D.
Cardiovascular and General Surgery
13000 North 103rd Avenue
Suite 99, Sun City
Guntur Medical College, India - 1973
Bruce Bethancourt, M.D.
Internal Medicine
1515 North Ninth Street, Phoenix
University of Arizona - 1980
Lesley Helen Johnstone, M.D.
Obstetrics and Gynecology
2207 North 54th Lane, Phoenix
University of Liege, Belgium - 1980

Pima

David Samuel Alberts, M.D.
Internal Medicine and Oncology
University of Arizona
Health Sciences Center
University of Wisconsin - 1967
John William McGettigan, Jr., M.D.
Emergency Medicine and
Internal Medicine
9940 East Bunker Hill Place, Tucson
Emory University - 1979
Rene E. Allen, M.D.
Obstetrics and Gynecology
3497 North Campbell Avenue - Tucson
University of Arizona - 1976
Charles F. Koopmann, Jr., M.D.
Otorhinolaryngology
University of Arizona
Health Sciences Center
Northwestern University - 1969

Walton Tinoco DeCarvalho, M.D.
General Practice
Arizona State Prison, Florence
Autonoma Universidad
de Guadalajara - 1983
Enrique Leon, M.D.
General Surgery
555 Morley Avenue, Nogales
University National of Mexico - 1960

New Service Member
LaPaz
August Meier, M.D.
General Surgery
Parker Indian Hospital, Parker
Stanford University - 1942
New Associate Member
Pima
Alfred H. Rosenblum, M.D.
Internal Medicine
6798 East Paseo Penoso, Tucson
Northwestern University - 1933

New Resident Members
Maricopa
Darlene H. Lambiaso, M.D.
University of Illinois
College of Medicine - 1982
William Keith Hornung, M.D.
Maricopa County Medical Center
University of Kentucky - 1984

Mary Nicola, M.D.
Psychiatry
Maricopa County Medical Center
Cairo University Medical School - 1969

Gerardo Carlos, M.D.
Obstetrics and Gynecology
Maricopa County Medical Center
Medical College of Wisconsin
William F. Bishop, M.D.
Good Samaritan Medical Center
University of Arizona - 1981
William Herbert Estes, M.D.
St. Joseph's Hospital
and Medical Center
University of Louisville - 1982

Eldad Vered, M.D.
Obstetrics and Gynecology
Maricopa County Medical Center
University of Texas
Medical School - 1984
Barbara Jean MacCollum, M.D.
Internal Medicine
Maricopa County Medical Center
University of Arizona - 1984
Maxwell S. MacCollum, III, M.D.
Orthopedic Surgery
Maricopa County Medical Center
University of Arizona - 1984
James R. Moen, M.D.
Transitional
Maricopa County Medical Center
University of Wisconsin - 1984

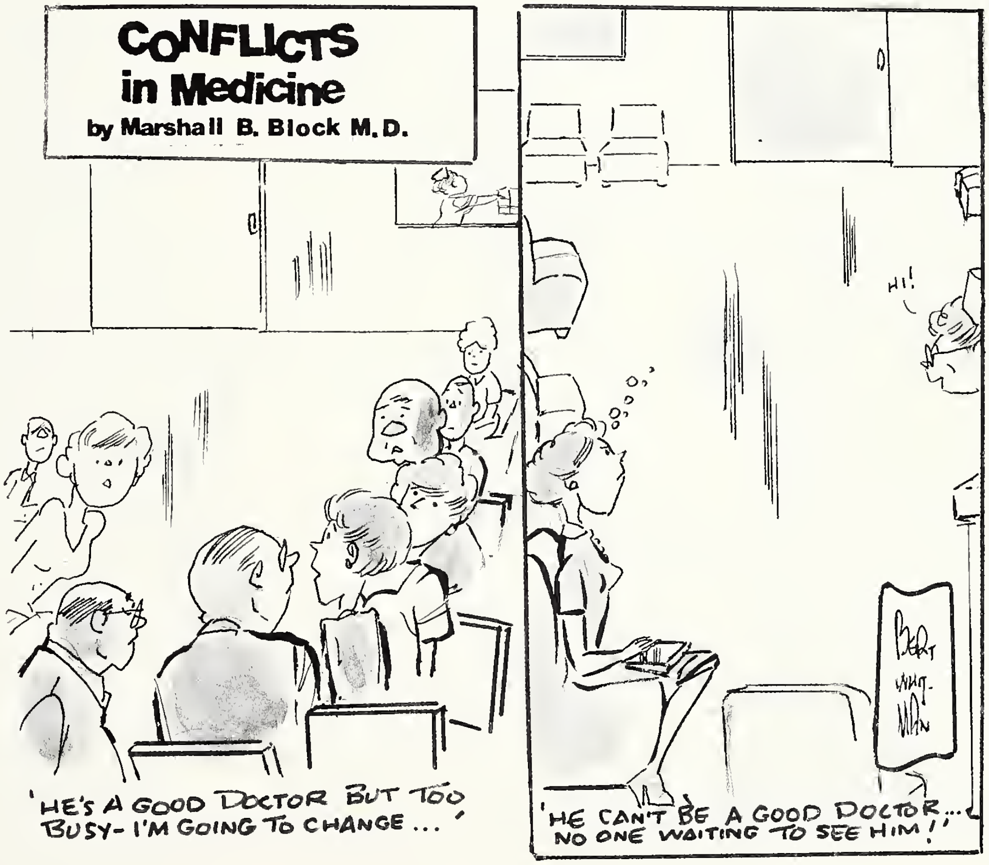
Charles R. Orozco, M.D.
General Surgery
Maricopa County Medical Center
University of Seattle - 1984
Russell Neibaur, M.D.
Transitional
Maricopa County Medical Center
University of Nevada - 1984

Pima
John T. Pellerito, Jr., M.D.
Tucson Hospitals Medical
Education Program
Edward Young, M.D.
Tucson Hospitals Medical
Education Program
Albany Medical College - 1982

New Affiliate Members
Cochise
Ronald Q. Butlin, P.A.
P. O. Box B04, Bowie

Graham
Albert Tuttle, P. A.
503 Fifth Avenue, Safford
Maricopa
Stephen Nunn, P. A.
2720 North 20th Street
Suite 220, Phoenix

Pima
Kathy T. Altman, P. A.
4720 North Oracle Road, Tucson


CONFLICTS in Medicine
by Marshall B. Block M.D.
HI!
'HE'S A GOOD DOCTOR BUT TOO BUSY- I'M GOING TO CHANGE ...'
'HE CAN'T BE A GOOD DOCTOR... NO ONE WAITING TO SEE HIM!'

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Editor:

Is Civil Defense a Moral Imperative or a Hoax?

Although the uselessness and immorality of civil defense may be obvious to members of Physicians for Social Responsibility (PSR), as asserted in their letter (*Arizona Medicine* XLI:258), the Chinese, the Swedes, the Swiss, and the Soviets do not agree. The Moscow publication *Voyenne Znantya* stated in May, 1978: "There is not and can never be a weapon from which there is no defense. With knowledge and the skillful use of contemporary procedures, each person can not only preserve his own life but can also actively work at his enterprise or institution."

It is hard to reconcile the belief that physicians should aid disaster victims with opposition to shelters, stockpiling supplies, and improvements in backup communications and other emergency systems. People in shelters would be alive to confront the problems enumerated by PSR. Those without shelters would probably be dead. Surely these physicians do not intend to advocate death as a solution to problems, as their logic inexorably implies.

Even Carl Sagan, *Science* 222:1283, concedes that most of the world's population would survive the blast, heat, and radiation of a heavy nuclear exchange. In the "nuclear winter" computer simulation, he invokes a number of worst case assumptions to show how mankind might provoke a climatic catastrophe similar to that caused by collision with a 10 km asteroid. However credible his hypothesis turns out to be, his opposition to civil defense, and particularly to antiballistic missile defenses, is a non sequitur.

Unquestionably, nuclear war would be terribly grim and everyone favors prevention. Nevertheless, failure to prevent "unthinkable" wars has all too many historical precedents. What is unprecedented is for statesmen to promote defenselessness, and for physicians to advocate policies that would maximize the number of casualties.

Jane M. Orient, M.D.

Library Talk

Book Reviews

Bertha R. Almagro

I must confess that I am a *book review-aholic!* During the course of a month I can easily read as many as 10 book reviews, scattered through a vas number of journals on diverse subjec matters. Why do I do this? Simply for two reasons: one, it is absolutely necessary for the success of the Collection Development Program, an two, because I love it! The careful reading of book reviews provides a unique opportunity to gain a broad perspective of developments in all subject areas as reflected in the book published. Marked increase in books does not signify a proportionate increase in information worthy of publication in volume form. Certain subjects achieve popularity, and hardl a publisher neglects to produce at lea one book on the subject, mostly sayin the same thing. Book reviews provide the kind of information that will help me decide whether the book is worth the expenditure and if it fits into the collection by following the standards set for collection development.

A book review is a combination of a report and critique. Its purpose is to summarize the major themes and general content, while passing judgment. In the process they describe, assess, inform, entertain, and even provoke. Reviewers have expertise and indepth familiarity with subject matter, thus providing thorough, unbiased, and objective evaluation. Despite Shelly's remark that "reviewers with some rare exception are a most stupid and malignant race," and Coleridge's comment that "reviewers are usually people who would have been poets, historians, biographers . . . if they could," reviewers perform a much needed service for which Librarians are particularly grateful.

That reviews can be illuminated by wit is clearly demonstrated by the following examples: "The title of this monograph is as alluring as a lit bulb is to moths. Unfortunately, like moths, the reader will blunt his enthusiasm against an opaque work." "This book is rather a banquet of nine courses. It would take a mighty jaded palate not to savor at least one or more dishes." "Like a collection of good short stories or a fine malt whiskey, it should be savoured sparingly."

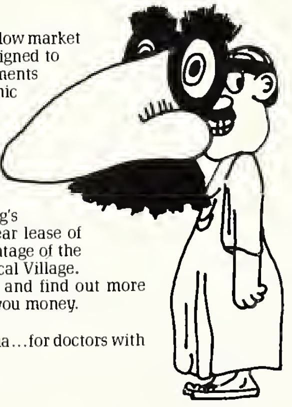
My two favorite book reviews utilize female analogies to drive a point. I am certain that both reviewers are included in Gloria Steinem's little black book of selected male chauvinists. The first one reads: "When I removed this book from its cocoon of cardboard it had the sensory effect of an attractive, well dressed woman at a cocktail party radiating all the zest of life and experience. It looked good, felt good, was pleasant to hold and raised delightfully optimistic thoughts regarding the evening's entertainment." The second compares two books on the same subject: "Sherwood's book is a slim, short-haired young lady, usually wearing jeans, brisk and sometimes disconcerting in manner, even though she is great fun. Elkin's book is a handsome, well-dressed woman of maturer years, distinctly ample, in fact, somewhat overweight. She is a lady of great experience who has seen it all, but her perspective is at times a little dated and has a tendency to dwell on past triumphs. She is however, more likely to listen sympathetically to your queries, even if her answers are a little discursive and not always conclusive."

How some books get reviewed while others are never reviewed depend on various reasons. Approximately ten percent of books sent out for review are lost due to failure of reviewers to submit a review, despite repeated urging from section editors. I have always wondered if this might be due to the prospect of writing a negative review. Some book reviewers have expressed their concern about ethical and moral standards, and cited instances in which academic reviewers have offered publishers to turn in favorable reviews if their own manuscripts are accepted for publication. Other cases point to reviewers who have "savaged" the books of colleagues with whom they were having a feud. Another problem yet is traced to "book reviewing incest." In this case, close colleagues review each other's books.

Given the ratio of review space to books published, many of them are never fully reviewed, but rather are included in the "Book Briefs" section which offers summaries. Second and subsequent editions of books whose first edition received a full review are included in this section. Composite reviews of several books on related subjects are covered by some journals as another way of coping with limited review space. Page restriction and the need to reduce publication costs are two good reasons for these policies. A very definite problem restricting book reviews is "selection." A book reviewer has declared that from an average 125 books received weekly, only 20 potentially reviewable books get selected. He candidly confesses that most of the time he doesn't know how to choose among them.

Since not all journals publish book reviews, and since the quality of the book reviews section varies greatly from one journal to the next, it is advantageous as well as necessary to identify which journals offer the best book reviews. To solve this problem, the Arizona Health Sciences Center Library has identified 325 journals from among the 2500 currently received as those including the best book review sections. Book reviews can go from an economical 200 words to a discursive 2000, including numerous bibliographical citations. The selection was based on stringent standards involving the quality of the journal, publisher, editorial board, reputation of reviewers, and the extent of the review. The journals selected have been arranged by subject category, providing an excellent tool for collection development.

It has been said that an author without a review is an unhappy author. I can give it a new twist by saying that a Collection Development Librarian without a book review is a very unhappy Librarian. I look forward to an increase of book reviews as long as reviewers do not follow Oscar Wilde's approach to this activity. Mr. Wilde's technique was to write the review, then, if he liked it, to read the book.



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ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

AD HOC SALT REDUCTION COMMITTEE

The meeting of the Ad Hoc Salt Reduction Committee of the Arizona Medical Association was held June 16, 1984.

The committee received a letter submitted by Elsie E. Eyer, President of the Arizona Public Health Association, which suggested that the committee's primary emphasis should not be on governmental programs but should be to target manufacturers to encourage sodium reduction in their products. Dr. Kossuth stressed that, when the committee was created by ArMA, the Board intended for its priority to be "to examine programs that provide food at taxpayers' expense under governmental supervision." After more discussion, the committee agreed upon the following governmental programs:

1. Review of school lunch programs.
2. Review of food service programs at detention facilities.
3. Review of the WIC supplemental food program.
4. Review of the cafeteria menus at the state universities and community colleges.

It was agreed that the July committee meeting would address school lunches; August would deal with detention facilities; and September, with WIC.

The committee also agreed to pursue the following general programs:

1. Prepare 52 (or more) columns for free use by newspapers. (Julian DeVries suggested the articles should be from 600 to 700 words. Dr. Kossuth agreed to suggest 20 topics and asked each committee member to suggest five different topics.)
2. Urge the Governor to proclaim a Salt Reduction Week. It was suggested that May might be an appropriate time, since that month is designated High Blood Pressure Month.
3. Suggest that the Scientific Assembly Committee present a program on hypertension.
4. Suggest that menus served at medical meetings be within the National Academy of Sciences' safe and adequate range for sodium.

GOVERNING COUNCIL - HOSPITAL MEDICAL STAFF SECTION and ARIZONA HOSPITAL ASSOCIATION LIAISON COMMITTEE

A meeting of the Governing Council of the Hospital Medical Staff Section of the Arizona Medical Association, Inc., and the Arizona Hospital Association Liaison Committee was held on Saturday, June 16, 1984 at the offices of the Arizona Medical Association, Phoenix, Arizona.

Following a brief statement on the circumstances which brought about the formation of the Hospital Medical Staff Section, the purpose of the Section and the Council, and the fact that the Council is not a policy-making group, Dr. Ward indicated that these liaison meetings would, likewise, not be policy-making but would provide for ongoing discussions of mutual problems and concerns from which input could be given to the boards and committees of both Associations. Introductions were then made, with brief comment by each individual as to activities and affiliations.

This subject being probably number one in priority for the health care profession in Arizona occupied the greater part of the discussion throughout the meeting, with heavy emphasis on the special session of the Legislature which is scheduled to begin on June 21st to see if appropriate legislation can be passed which would assist in lowering health care costs for an interim period and possibly prevent the initiative from being on the November ballot. Various proposals which have been presented to the Governor from different areas and groups throughout the state were reviewed and the Attorney General's opinion regarding withdrawal of an initiative discussed. It was a general consensus of the group that the most important things to be done were 1) to assist in every way possible in securing legislation that could be accepted while data was being collected and 2) to begin an extensive educational program for medical staffs throughout the state.

It was deemed vital that another meeting be held following the special session to review whatever legislation might evolve as well as to determine what activity, if any, should be instituted regarding the initiative.

A brief discussion was held regardin the recent changes in the JCAH Standards allowing for application for staff privileges by allied health care professionals and the fact that, for the most part, this was being handled by most hospitals evaluating the individu rather than the type of professional. It was, however, agreed that the development of a data bank in this are would be helpful for educating of members as well as combating any applicable future legislation which might be proposed.

At the invitation of the Arizona Hospital Association, it was agreed tha the next meeting would be held at ArHA's offices in Phoenix at 10:30 a.m on Saturday, July 7, 1984, with that Association agreeing to mail the call letter to all members of its Liaison Committee, as well as the Council. Some of the items to be included on the agenda for that meeting will be a discussion of any legislation passed during the special session and the initiative; a discussion of the health care "market" and what it is; and a report by Dr. Shallenberger on the Annual Meeting of the AMA Hospital Medical Staff Section.

The Council considered various item for the agenda for the September 15th meeting of the Hospital Medical Staff Section and determined to include the following: 1) an update on the special session of the Legislature and new legislation (Barr, Babbitt or Usdane); 2) expansion on the legislation and an educational presentation re: CON, rate setting, capital expenditures (Arizona Hospital Association representative); 3) an explanation of the effect of the initiative on physician's offices and the public; and 4) an update on UB82 which requires profiles of physicians' practices.

GOVERNING COUNCIL - HOSPITAL MEDICAL STAFF SECTION and ARIZONA HOSPITAL ASSOCIATION LIAISON COMMITTEE

A meeting of the Governing Council of the Hospital Medical Staff Section of the Arizona Medical Association, Inc., and the Arizona Hospital Association Liaison Committee was held on Saturday, July 7, 1984, at the offices of the Arizona Hospital Association, 4202 East Raymond Street, Phoenix, Arizona. Neil O. Ward, M.D., Chairman of the Governing Council, presiding.

Copies of H.C.R. 2001, H.C.R. 2004, H.B. 2005 and S.C.R. 1001 considered ring the recent special session of the gislature were distributed for the mmittee's review, together with a mmary reviewing each piece of gislation. A very in-depth esentation of the bills and the mmary was made by Sandy Spellman an attempt to explain the mifications of the various pieces of gislation (including the veto of H.B. 06, which would have extended CON it, by virtue of its veto, created an en window for new health care rvices and hospital construction less another special session is called d is successful in closing the gap hich currently will exist between ugust and January of 1985). The uations which could arise by virtue of e voters passing any number of mbinations of the three referenda d the Coalition's two initiatives this ovember are confusing and likely to sult in court challenges. A lengthy scussion ensued, during which many rtions of the various bills were scussed and questions regarding clusion or exclusion of particular ems were answered. Two items emed to assume prime importance, e., the closing of the CON window eated by the Governor's veto to H.B. 06 and the development of a mplified statement and a presentation be used in educational efforts with hysicians, medical staffs, and patients explain the alternatives which will be vailable on the November ballot. Ms. pellman agreed to provide the embers of the HMSS Governing ouncil with a refined copy of the ummary for their use in upcoming staff eetings.

It was agreed that the next meeting vould be held at the offices of the rizona Medical Association at 10:00 .m. on Saturday, August 18, 1984.

ONG RANGE PLANNING COMMITTEE

A meeting of the Long Range lanning Committee of the Arizona ledical Association, Inc., was held on aturday, July 14, 1984, in the offices of he Association, 810 West Bethany lome Road, Phoenix, Arizona, Neil O. Vard, M.D., Chairman, presiding.

In accordance with the action taken t the April meeting of the committee, ne members reviewed and discussed ne bylaws' charge to and the activities f the following four committees:

Dr. Bittker, the committee's hairman, outlined the activities which ad heretofore been carried on by the ommittee, explained the reasons ehind the committee's discontinuance f surveillance activities, and discussed he desirability for looking at and rafting legislation which would: 1) professionalize rehabilitative methods in Arizona and 2) confer immunity for treating physicians. It was moved and carried that the Long Range Planning Committee endorses the concept of the Physician's Health Committee and, in an attempt to perpetuate its existence, requests that the Executive Committee establish an Ad Hoc Committee to draft a legislative proposal for change in the current statutes relating to reporting of impaired physicians and suggested that the following be considered as members of such committee: Thomas E. Bittker, M.D., Laurence M. Linkner, M.D., Edward Sattenspiel, M.D., Richard D. Zonis, M.D., Allan J. Stanton, Esq., Kevin Walker, and an Auxiliary representative to be selected by Mrs. Mary Eleanor Holmes.

Dr. Ward reported that conversations with the current chairman of the Publishing Committee, Dr. Marshall Block, indicated that most committee business was transacted by phone or in individual reviews of articles which had seemed most efficient in the past as both a time and money saving device, and that a meeting of the newly appointed committee would be held in September. It was determined to make no recommendations regarding such committee at this time.

In light of the recent changes in the law and in ArMA's CME reporting requirements, the basic functions of the Medical Education Committee were discussed at length. It was the consensus of the members that ArMA should, in fact, continue to provide educational programs to its members and CME certificates to those who wished to continue to voluntarily report. It was moved and carried to recommend to the Executive Committee that it request the Medical Education Committee to intensify its liaison efforts with the University of Arizona, develop in-depth, high quality voluntary continuing education programs by accreditation, and report on the cost effectiveness of the committee's activities.

Because many of the activities initially designated for the Professional Committee had, over the years, been assumed by other standing committees, it was moved and carried that Dr. Hanss, as chairman of the Professional Committee, be invited to the next meeting of the Long Range Planning Committee to express his views as to whether the balance of that committee's activities could be directed to another standing committee and the professional committee disbanded. It was agreed that at that same meeting, Dr. Ward would place various other ArMA committees on the agenda for discussion, with a view to possibly recommending that the Association have fewer standing committees, consolidating those which now have very narrow fields of activity, and creating ad hoc committees on an as needed basis for a time frame more appropriate to the issues to be confronted.

The annual meeting of the Association was discussed at great length, consideration being given to both attendance and financial aspects of the past several years. It was the consensus that no changes be recommended, but agreed attempts be made to increase the attractiveness of the meeting, either by speakers or functions, and that financial assistance be solicited from commercial groups. Concern was expressed about the lack of attendance and involvement by the delegates and, in going over the bylaws requirement for numbers of delegates to be selected, it was determined that perhaps with the growth of numbers of physicians in the county societies since the writing of that section of the bylaws it was time that the formula for selection of delegates be reassessed. It was moved and carried to recommend to the Executive Committee that a review be made of Chapter VIII, Section 2 (A) of the Association Bylaws and consideration given to changing the formula for selection of county society delegates to ArMA, thereby reducing the size of the House of Delegates.

The importance of ArMA's involvement in informing the public, as well as its members, on health related issues was discussed, it being agreed that we should play a key role in raising awareness externally as well as internally on those issues which will ultimately affect our patients. Some possibilities which were discussed were co-sponsorship of educational programs, cable TV programs, efforts in establishing a statewide information clearing house, and based upon the committee's discussion. It was moved and carried that it is the opinion of the Long Range Planning Committee that the Association seriously investigate a program on public awareness which would address such issues as the significance of the rationing of health care and develop methods of getting such information to the public.

With regard to the review of the Association's seven existing goals and any recommendations thereon, Dr. Ward requested staff to update and circulate the status report prior to the next meeting of this committee, at which time consideration would be given to whether some goals had actually been accomplished, whether new goals should be recommended, and whether the priorities of existing goals should be changed.

Future Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
 Lung Association
Walter O. Boswell Memorial Hospital,
 Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
 of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program,
 (THMEP) Tucson
University of Arizona College of Medicine,
 Tucson
Veterans Administration Medical
 Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

AUGUST

Putting Back a Smile After Facial Skin Cancer
August 21, 1984, 12:00 noon at St. Joseph's Hospital & Health Center, 350 North Wilmot Road, Tucson, Arizona 85732. Contact: Yvonne Clingerman, (602) 296-3211. To be presented by Frederick Menick, M.D., a plastic & reconstructive surgeon in private practice.

A Talk on Allergies
August 28, 1984, presented by Dr. James Dover, an allergist with Thomas-Davis Clinic. Conference will be held at 12:00 noon in the auditorium at St. Joseph's Hospital & Health Center, 350 North Wilmot Road, Tucson, Arizona. Contact: Yvonne Clingerman, (602) 296-3211.

7th ANNUAL CURRENT CONCERNS IN ADOLESCENT MEDICINE "A PRACTITIONER'S GUIDE TO TEENAGE HEALTH CARE"

October 25 & 26, 1984, The Warwick Hotel, New York, NY. Sponsored by: Divisio of Adolescent Medicine, Department of Pediatrics, Schneider Children's Hosp tal, Long Island Jewish-Hillside Medical Center, New Hyde Park, NY. Topic include: Communicating with the Teenage Patient and Family; Hematologic Problems; Anorexia Nervosa; Diabetes in Adolescents; Common Infections i Adolescents; Gynecology for the Practitioner; Sexually Transmitted Disease Recognizing Depression; Abdominal Pain; Sports Evaluation, and more. Credit 12 Category 1 from the ACCME and AMA. Information: Ann J. Boehme, Continu ing Education Coordinator, Long Island Jewish-Hillside Medical Center, Ne Hyde Park, NY 11042, (212) 470-2114.

SEPTEMBER

Clinical Seminar Series, What's New in the Surgical Specialties?
September 15, 1984, University of Arizona Health Sciences Center, Tucson, Arizona, Office of Continuing Medical Education and Outreach.

Hematology/Oncology—series will be run September 4, October 2 and December 4, at St. Joseph's Hospital & Health Center, 350 North Wilmont Road, Tucson, Arizona, 85732. Contact: Yvonne Clingerman, (602) 296-3211—**Radiology Conference Series** — will be run September 11 & 15, and October 16 & 30.

OCTOBER

8th Annual Meeting—American Society of Biomechanics
October 3 - 5, Plaza International Hotel, Tucson, Arizona. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach.

Neuroscience Satellite Symposia
October 8, 1984, Meaning and Methods of Muscle Architecture Studies — October 9, 1984, Organization of Movement, Arizona Health Sciences Center, Tucson, Arizona. Contact: Office of Continuing Medical Education and Outreach.

Clinical Seminar Series
October 13, 1984, Immunology in Clinical Practice, Double Tree at Scottsdale Mall, Scottsdale, Arizona. Contact: University of Arizona, Office of Continuing Medical Education and Outreach

Western Society of Allergy and Immunology
October 25-27, Radisson Resort, Scottsdale, Arizona. Contact: University of Arizona, Office of Continuing Medical Education and Outreach.

Pathology Conference
Series will be presented on October 9, November 13, and December 11, at St. Joseph's Hospital & Health Center, 12:00 noon in the auditorium, 350 North Wilmont Road, Tucson, Arizona. Contact: Yvonne Clingerman, (602) 296-3211.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

Neurology and Dermatology, the Annual Fall Pediatrics Conference, sponsored by the Arizona Pediatrics Society. October 13 14, 1984 at the Doubletree Hotel, Tucson, Arizona. Approved for Category 1 credit hours. Featured speakers will include: Joh M. Freeman, M.D., of Hohns Hopkins University, Gerald N. Goldberg, M.D., Peggy Ferry, M.D., Allan Kaplan, M.D., and James Rasmussen, M.D., University of Michigan. Contact: Lolly Dwan, Coordinator, CME — University of Arizona College of Medicine, Tucson, Arizona, 85724. (602) 626-6173.

XXXII ANNUAL MEETING
of the
MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

November 14—17, 1984
Camino Real Hotel
Guadalajara, Jalisco, Mexico

For membership and meeting information, contact:
Kevin Walker, Executive Secretary
Medical Society of the United States and Mexico
810 West Bethany Home Road
Phoenix, AZ 85013

ARIZONA STATE HOSPITAL

500 E. Van Buren, Phoenix, AZ 85008.
ontact: Martin B. Kassell, M.D.
nservice Training
st Friday, 1:00-2:00 p.m., Room 5,
ducation Building.
sychiatric Case Presentation
nd Friday, 1:00-2:00 p.m. Room 5,
ducation Building.
linical Pathological Conference
rd Friday, 1:00-2:00 p.m., Room 5,
ducation Building
pen Topic
th Friday, 1:00-2:00 p.m., Room 5,
ducation Building

BARROW NEUROLOGICAL INSTITUTE

edical Education
arrow Neurological Institute of
t. Joseph's Hospital and Medical Center,
50 W. Thomas Rd., Phoenix, AZ 85013.
ponsor: St. Joseph's Hospital & Medical
enter.
ontact: John R. Green, M.D.
pproved for 1 hour Category 1 credit.
eurology Teaching Conference
uesdays, 8:30-9:30 a.m., Eighth Floor
onf. Room.
eurosurgical Morbidity Conference
ednesdays, 8:15-9:15 a.m., on first and
ird and fifth, Eighth Floor Conference
oom.
euro-Ophthalmology Conference
ondays, 7:30 a.m. in 8th floor neurology
nference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, Ed.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept. & Nov.
Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Continued on page 561

Family Practice Department Meeting
1st Monday, 12 Noon, (June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

Medicine Department Meeting
1st Friday, 12:15 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.
Surgical Conference
Weekly, Monday 8:00 a.m., Contact: Eric G. Ramsey, M.D.
Medical Conference
Daily, 12:30 p.m., Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: James Byers, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008.
Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.
Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
1st & 3rd Monday, 12 Noon.
Medicine GI
2nd & 4th Monday, 12 Noon.
Medicine Dermatology
5th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m.
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon.
Contact: Neil Shernoff, M.D.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematol
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conferen
1st, 2nd & 4th Wednesday, 3:30 p.m.
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7:30 a.m.
Anesthesiology Journal Club
4th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
4th Thursday, 8:00 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.

Program Description:
This course covers such topics as venous injury, thromboembolism, coagulopathy and hemorrhagic disorders, infection and nutritional deficiencies and other related subjects. All are common denominators affecting every specialty area in a multidisciplined organization such as the International College of Surgeons.

CME Credit:
The United States Section, International College of Surgeons, has designated this continuing medical education activity as meeting the criteria for 16½ credit hours in Category 1 of the Physicians Recognition Award of the American Medical Association.

COLLEGE INTERNATIONAL DE CHIRURGIENS

PRIORITIES IN THE MANAGEMENT OF THE CRITICALLY-ILL, MULTI-TRAUMA PATIENT

INTERNATIONAL COLLEGE OF SURGEONS
1984 UNITED STATES SECTION ANNUAL MEETING

November 12-14, 1984
The Pointe Resort
Phoenix, Arizona

Faculty:

Maria D. Allo, MD
Baltimore, Maryland

F. William Blaisdell, MD
Sacramento, California

Ralph G. DePalma, MD
Washington, DC

Miles H. Irving, MD
Salford, United Kingdom

Mitchell V. Kaminski, Jr., MD
Chicago, Illinois

Wendy J. Marshall, MD
Norfolk, Virginia

Donald D. Trunkey, MD
San Francisco, California

For further information:
CME Coordinator, U.S. Section, ICS, 1516 North Lake Shore Drive, Chicago, Illinois 60610. Telephone (312) 787-6274.

B/GYN Tumor Board
h Friday, 12 Noon.
urgery Tumor Board
st, 2nd & 3rd Friday, 12 Noon.
YN Endo Conference
st & 3rd Friday, 12:30 p.m.
ediatric Radiology Conference
st & 2nd Friday, 12:30 p.m.
ediatric Dermatology
d Friday, 12:30 p.m.
ediatric Infectious Disease
h Friday, 12:30 p.m.
urgery Rehab Rounds
eekly, Friday, 1:30 p.m.
urgery Selected Readings
nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

01 West 10th Place, Mesa, Arizona 85201.
ontact: E. John Wickman, M.D.
ontinuing Medical Education Programs
uesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

025 N. 20th Ave., Phoenix, AZ 85015.
ontact: J. Burr Ross, M.D., Approved for
ategory 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon,
5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon,
5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D.,
Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m.,
Conf. Rm. A, Contact: Drs. L. Fairbanks &
E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for
Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva
Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm.,
Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251.
Contact: Tom Disney, M.D., Approved for
Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.

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Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.

Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am. - 8:30 am., Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
A Talk on Allergies
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium
Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Joint Liver Conference - Lab Conference Room
2nd Monday of each month - 12:00 noon.
Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesdays, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neuorology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conferer
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category credit.
Urology Conferences
Weekly, Tuesdays, Room 2413—Uropathology
Weekly Tuesdays, Room D-335 — Consultation
Weekly, Fridays, Room 3134 — Uroradiology
These activities are a part of the CME program at the Veterans Administration Medical Center
Medical Service Grand Rounds
Weekly, Friday, 11:00 a.m. Rm. T-5, Contact Dr. Zeller, Ext. 272
Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134 Contact: Dr. Kozarek, Ext 413 Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm. T5, Contact: Dr. Byrne, Ext. 426.
Endocrine Conference
Weekly, Friday, 1:00 p.m., Rm. C435, Contact Dr. Benene, Ext. 786
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo, Ext. 362 and Dr. Mertz, Ext. 495.
Surgery — Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.

Radiology Clinical Correlation onference
t and 3rd Tuesdays, 12:00 noon, Rm. 35, Contact: Dr. Sanowski, Ext. 321.

I. Grand Rounds
eekly, Tuesday, 1:00 p.m., Rm. C435
ontact: Dr. Sanowski, Ext. 321

Pathology Conference
d and 4th Tuesdays, 12:00 noon, n. 2413, Contact: Dr. Sanowski, Ext. 321

enal Conference
ternating Wednesdays, 1:00 p.m., Rm. 35, Contact Dr. N. Sharma, Ext. 212

ology Histopathology Conference
eekly, Tuesdays, 8:00-9:00 a.m., Rm 2410, ontact: Drs. Haddad & Kivirand, Ext. 417.

lmonary X-ray Correlation Conference
eekly, Wednesdays, 12:30-1:30 p.m., oom 4115, Contact: Dr. Rohwedder, t. 388.

rdiology Conference
d & 4th Thursday, 1:00 p.m., Rm. C435, ontact: Dr. C. Sharma, Ext. 435

edical/Surgical Chest Conference
t & 3rd Thursdays, 12:30 p.m., Rm. 4115 ontact: Dr. Rohwedder.

edical Mortality Conference
t Friday, 11:00 a.m., Room T-5, ontact: Dr. Zeller, Ext. 272

edical-Surgical G.I. Conference
t & 3rd Monday, 3:00 p.m., Rm. 3134 ontact: Dr. Sanowski Ext. 321 & Dr. Mertz, t. 495

edical-Surgical Chest Conference
t & 3rd Thursday, 1:00, Rm. C435, ontact Dr. Rohwedder, Ext. 388

eurology Conference
ternating Wednesdays, 1:00 p.m., Rm. 35, Contact: Dr. Lawrence, Ext. 410.

euro-Psychiatry Conference
n Thursday, 2:30 p.m., Rm. 4115, Contact . Arnold, Ext. 647

rthopedic Surgery Conference
d Monday, 7:30 a.m., Rm. 3134, Contact: . Russo Ext. 362 & Dr. Mertz Ext. 495

ychiatry Service Clinical Conference
d Wednesday, 8:30 a.m., Rm. D512, ontact Dr. Arnold, Ext. 647.

lmonary Xray Correlation Conference
eekly, Monday, 10:00 a.m., Rm C435, ontact Dr. Rohwedder, Ext. 388.

rgery-Pathology Conference
d Monday, 4:00 p.m., Rm. 2413, Contact . Mertz, Ext. 495 & Dr. Kerr, Ext. 511

rology Conference
eekly, Tuesday, 8:00 a.m., Room 3134, ontact: Dr. Haddad, Ext 418.

ropathology Conference
eekly, Tuesday, 9:00 a.m., Rm. 2413 ontact: Drs. Haddad & Kivirand, Ext. 418

roradiology Conference
eekly, Friday, 12:00, Rm. 3134, Contact . Haddad, Ext. 418

ascular Conference
nd Friday, 8:00-9:00 a.m., Rm. 3134, ontact: Dr. Cintora, Ext. 417.

PRESCOTT VETERANS DMINISTRATION HOSPITAL MEDICAL CENTER

rescott, Arizona 86313. Contacts listed elow. Approved for Category 1 credit.

edical Rounds
st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

urgical Rounds
h Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A, Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Department of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma, Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Drs. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m., Contact: Dr. Ewy.

Cardiology Non-Invasive Conference
Weekly, Friday, 3:30 p.m., Contact: Dr. Ewy.

Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn, Contact: Karen Garcia.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Contact: Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Department of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conferenc
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 5505

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC, Contact: Dr. J. Goldstone.

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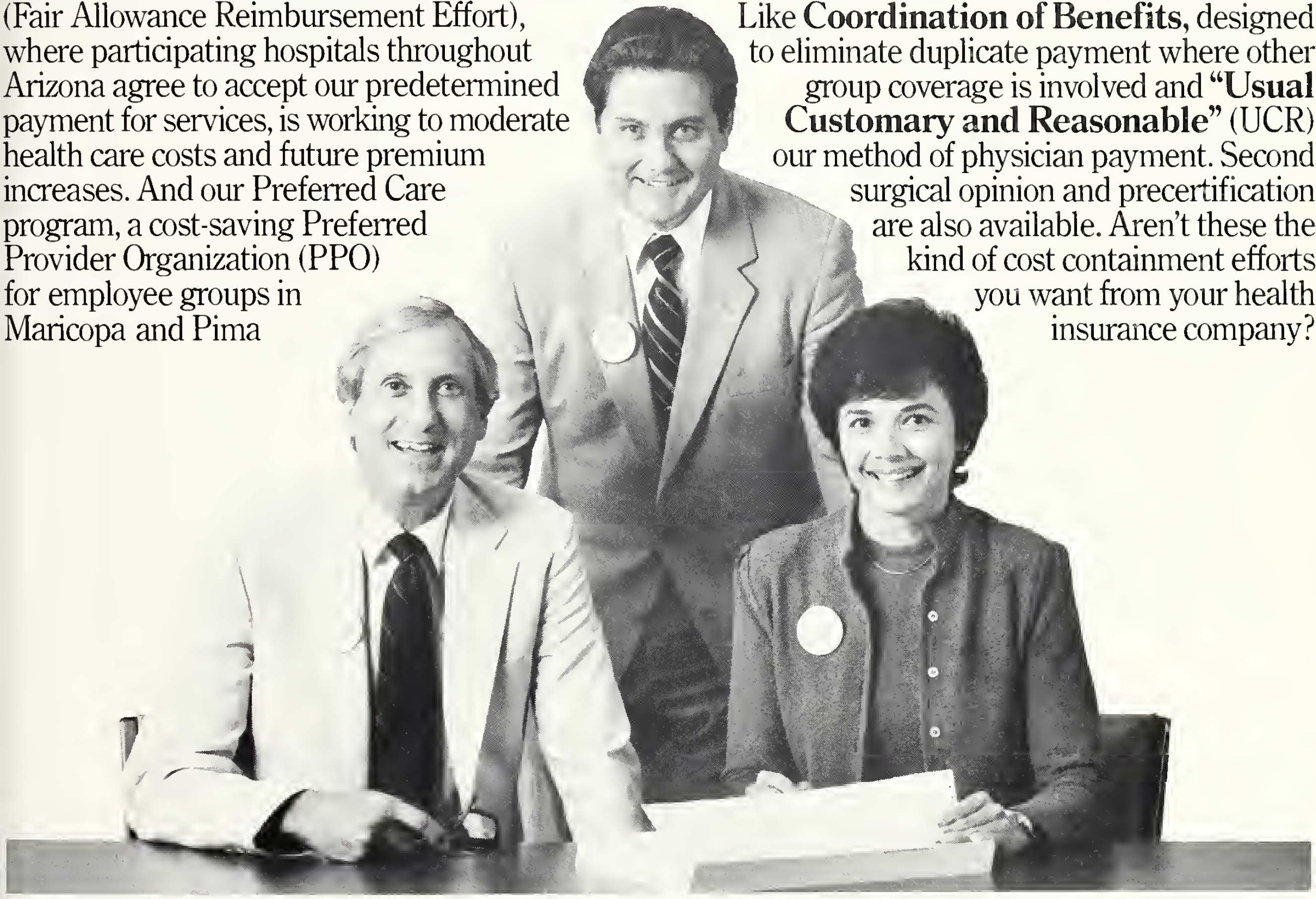

Supervising medical review: Laurence Linkner, M.D., Senior Vice President, Medical Affairs, Robert Bulla, President, Blue Cross & Blue Shield of Arizona and Phyllis Luando, R.N. Manager, Medical Review.

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________	017 Cimetidine
________	031 Clindamycin/Lincomycin—Oral
________	016 Corticosteroids—Oral
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________	005 Digitalis Medicines
________	034 Ergot Derivatives
________	010 Erythromycin
________	026 Ethosuximide
________	001 Furosemide
________	024 Guanethidine
________	022 Haloperidol
________	023 Hydralazine
________	035 Indomethacin
________	015 Insulin
________	038 Iron Supplements
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________	030 Metronidazole
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________	059 Methotrexate (for psoriasis)
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________	041 Phenothiazines
________	058 Potassium Supplements
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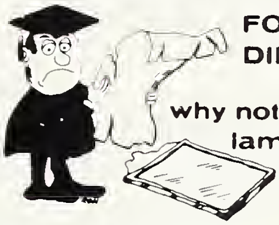

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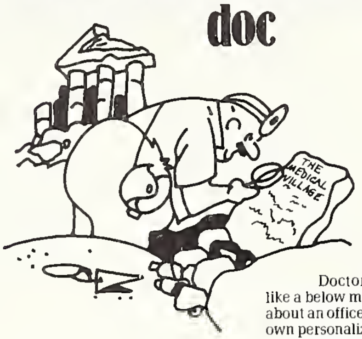

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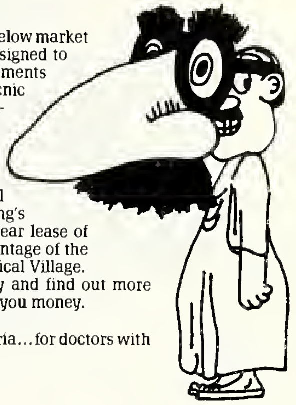

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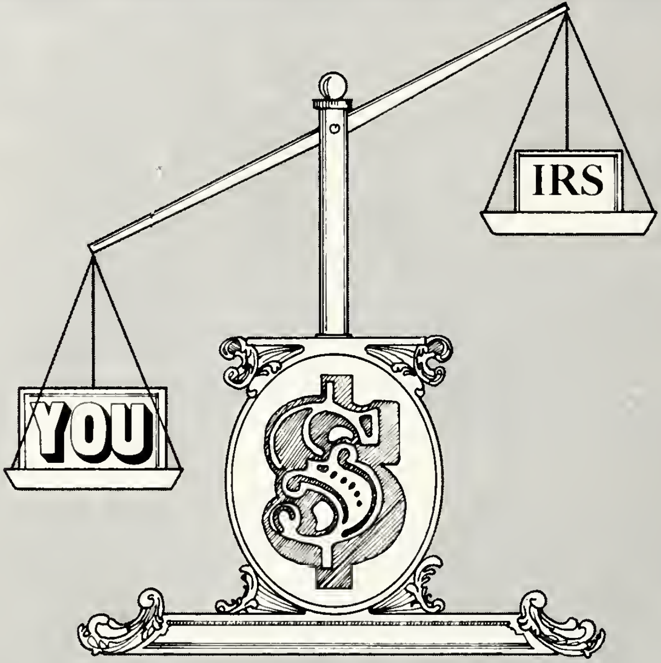

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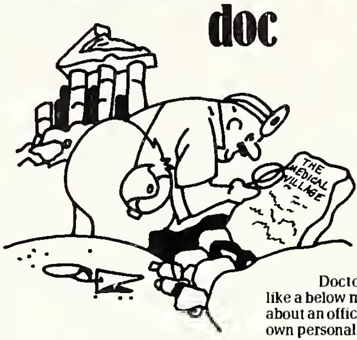

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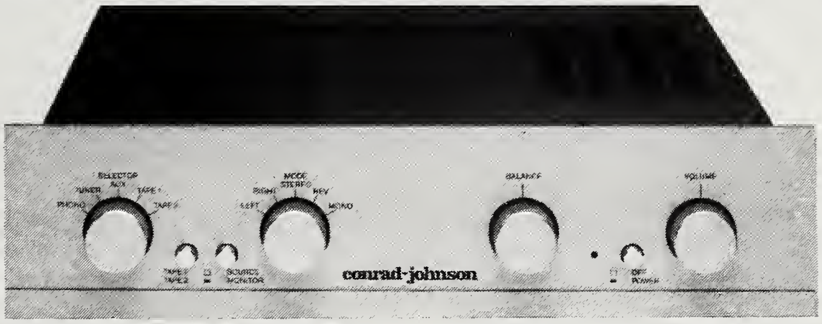

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Cardiology

Prinzmetal's Variant Angina

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Editor:
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Prinzmetal's variant angina (PVA) is characterized by cyclic episodes of severe chest pain usually occurring at rest, often nocturnal and generally associated with S-T segment elevation on the electrocardiogram (ECG). The hypothesis suggested by Prinzmetal, et al. that coronary artery spasm plays a major role in the mechanism of variant angina, has been well documented by many other investigators.[2-5] Coronary artery spasm may occur spontaneously or may be precipitated by exercise,[6] hyperventilation,[7] cold,[8] alkalosis,[9] alcohol[10,11] and pharmacologic agents [12-18](Table 1). It has been established that a large number of patients with PVA have associated coronary artery atherosclerosis.

Table 1
Precipitating Factors for Coronary Artery Spasm

Physical	— Exercise
	— Cold
	— Hyperventilation
Metabolic	— Alkalosis
Pharmacological	— Ergot alkaloids e.g. Ergonovin
	— Methacholine
	— Histamine
	— Epinephrine
	— Aspirin
	— Thromboxane A_2
	— β-Blocking agents
	— Alcohol
Mechanical	— Catheter induced

Clinical Features

Variant angina, originally thought to be a rare syn
drome, has recently been recognized as a frequen
cause of chest pain. In large referral centers, PVA ha
been diagnosed in two percent to three percent o
patients undergoing cardiac catheterization for angin
pectoris. The cardinal feature of PVA is spontaneou
repetitive chest pain occurring at rest. In contradistin
tion to classical angina pectoris the chest discomfort ma
not be preceded by increased myocardial metabol
demands such as physical exertion or emotional stres
Coronary arterial spasm and S-T segment elevation o
the ECG, however, may be induced by exercise i
selected subjects who experience typical variant angin
pectoris at rest.[19] The variant anginal attacks occur mor
frequently in the early morning hours and are noted i
younger patients. Some of the salient features whic
may be helpful in distinguishing PVA from classic angin
pectoris are listed in Table 2. PVA may occur in associa
tion with other vasospastic disorders such as migrain
headaches or Raynaud's phenomenon. On the oth
hand, coronary artery spasm may present as pos
infarction angina pectoris in some patients recuperatin
from recent myocardial necrosis.[20] Finally, some patien
with PVA may present with syncope or even sudde
death which is presumed to be evoked by ventricula
arrhythmias.

Hemodynamic Studies

A transient decrease in myocardial blood flow ha
been proposed as the explanation for attacks of varian
angina. Coronary artery spasm has been well docu
mented by coronary arteriography during these attack
Maseri and co-workers[21] have shown transien
decreased regional thallium-201 uptake in patients wit
PVA. Feldman et al.[22] have proven the concept o
decreased myocardial oxygen supply during attacks o
variant angina by measuring flow in the coronary sinu
and great cardiac vein. These studies suggest th
reduced coronary blood flow and diminished oxyge
supply is probably the major mechanism which precip
tates PVA.

From: The Institute for Cardiovascular Diseases, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona 85006. Reprint requests to Alberto Benchimol, M.D., Good Samaritan Medical Center, P. O. Box 2989, Phoenix, Arizona 85062. Supported in part by the E. Nichols Memorial Fund, and The Institute for Cardiovascular Diseases, Inc.

Table 2
Classic Angina vs. Variant Angina — Clinical Features*

	Classic Angina	**Variant Angina**
Characteristics of pain	Often exertional	Usually at rest
Evolutionary reduction of exercise tolerance	Present	Absent
Cardiac risk factors	Present	Absent
Age	Old	Young
Sex	Commonly males	Both sexes
Cardiac examination	Left ventricular dysfunction common	Usually normal
Electrocardiogram	ST segment depression	ST segment elevation
Coronary anatomy	Fixed obstruction	Normal or diseased coronary arteries

*Variant angina due to coronary artery spasm superimposed on fixed obstructive lesions may have mixed features.

gnosis

Vhen considering the possibility of PVA, a detailed, eful history is of prime importance. Typically, a young ient without any previous history of chest pain or diac risk factors presents with severe angina pectoris d typical S-T segment elevation on the ECG.

ctrocardiographic Features

he ECG during chest pain is a key to the diagnosis of A. Such tracings characteristically demonstrate S-T ment elevation which normalizes when the chest n subsides. Other electrographic abnormalities asso- ted with PVA include S-T segment depression, alter- ing S-T segment elevation and depression, S-T ment and T wave alternans, transient conduction normalities such as left anterior or posterior fascicular cks and bifascicular blocks[23-26] (Figure 1).

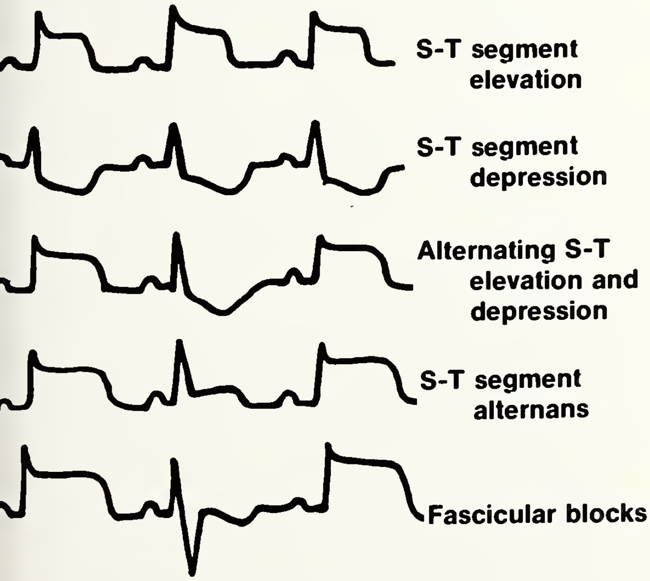

Figure 1
Prinzmetal's Variant Angina

Holter Monitoring

A 24-hour ambulatory ECG may prove helpful in detecting S-T segment elevation in patients with PVA. Since the frequency of variant angina may vary from a few attacks daily to an occasional episode once or twice a month, use of the Holter monitor may be limited in patients with infrequent attacks. Self-initiated long-term transtelephonic monitoring has been shown to be diagnostic in such patients.[27]

Coronary Arteriography

Coronary arteriography is often necessary to establish the diagnosis in patients with PVA. Coronary artery spasm has been consistently shown during spontaneously occurring or provoked attacks of PVA. It is currently thought that localized coronary arterial lesions act as the substrate which renders the vessel susceptible to spasm. Accordingly, coronary arteriography is indicated in the vast majority of patients with variant angina to detect those with significant coronary obstructive disease who may benefit from surgery.

Provocative Testing

A number of provocative tests have been utilized for the diagnosis of PVA. Exercise, the cold pressor test, and hyperventilation can all induce coronary artery spasm. Methacholine[12] and histamine[18] have also been used to provoke PVA. The ergonovine test, however, has been most popular and is widely employed because of its high sensitivity and specificity. Although the ergonovine test has been performed safely in coronary care units,[28] there is an inherent risk of potentially dangerous arrhythmias.[29] A majority of such studies should therefore be done by experienced personnel in a well equipped cardiac catheterization laboratory where coronary artery spasm can be documented by the ECG and coronary arteriography. Once the diagnosis is established, sublingual nitroglycerine or nifedipine should be administered immediately. Occasionally intravenous or intracoronary nitroglycerine may be needed to relieve prolonged and severe spasm.

Complications

Malignant ventricular arrhythmias are well known complications of coronary artery spasm. Approximately one-half of the patients reported in Prinzmetal's original paper had ventricular arrhythmias.[1] A recent study confirmed that ventricular arrhythmias are present in 47% of patients with variant angina.[30] These arrhythmias appear to be due to prolonged ischemia from coronary artery occlusion during spasm as well as the period of reperfusion. Both types of arrhythmias correlate well with the severity and duration of ischemia. Occasionally, a patient with PVA may present with syncope which is primarily based on ventricular arrhythmias or advanced heart block.[31] A prolonged, unrelieved spasm may result in myocardial infarction.[32] The degree of ischemia as reflected by maximal S-T segment elevation, presence of serious arrhythmias and associated coronary artery disease are some of the determinants of sudden death[33,34] in patients with variant angina.

Management

Nitrates are usually effective in alleviating the acute attacks of Prinzmetal's variant angina as well as preventing their recurrence. Sublingual or intravenous nitroglycerine terminates the acute attack promptly and long-acting nitrates are used prophylactically to prevent recurrences. These drugs, through their direct vasodilating effect on the coronary arteries, prevent myocardial ischemia and therefore are effective in PVA.

Another class of drugs, the calcium channel blockers, have also been found to be very effective in the treatment of PVA. Calcium channel blockers alone or in combination with nitrates, are very helpful in the prophylactic therapy of PVA. Verapamil and nifedipine have been shown to exert an equivalent beneficial effect.[35] In another recent study, nifedipine and diltiazem were shown to have similar efficacy and their effect was more pronounced when these two drugs were combined.[36] Additionally, nifedipine has been shown to block coronary artery spasm induced by ergonovine.[37] In the multicenter trial, diltiazem was shown to be effective and safe for treatment of PVA.[38]

The utility of beta-adrenergic blocking drugs in PVA is variable and controversial. Subjects with associated fixed coronary obstructive lesions may benefit from their use. In some patients, however, these drugs may cause exacerbation of vasotonic angina by specifically blocking the beta-receptor and causing alpha receptor mediated vasospasm.[17] Therefore, beta-blocking drugs should be carefully used, if at all, in patients with variant angina.

Coronary artery bypass surgery may be helpful in patients with associated significant obstructive lesions. Surgery itself does not prevent the coronary artery spasm, and both calcium channel blockers and nitrates should be continued postoperatively. Surgery is not indicated in patients with isolated coronary artery spasm and no demonstrable coronary lesions.

Prognosis

Fixed coronary obstructive disease has been shown be the single most important prognostic factor patients with PVA. In the medically treated group stu ied by Mark, et al.,[39] 86% of the non-fatal myocardi infarctions occurred within the first month after cardi catheterization and 50% of deaths occurred during th first six months after study. It is thus evident that patien with PVA are at high risk for nonfatal myocardial infar tions as well as death within the first six months aft diagnosis. These considerations provide the basis f early aggressive diagnosis so that appropriate thera can be implemented.

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AM *Dermatology*

The Use of Topical Corticosteroids in Dermatology

Steven C. Shapiro, M.D.

Editor:
Steve Shapiro, M.D.

Abstract

Topical corticosteroids are invaluable in the treatment of a wide variety of dermatologic problems. Their systemic effects are well known to the practitioner. Applied topically, steroids can be absorbed in quantities sufficient to depress adrenal function. If applied to infected skin with bacteria, viruses or fungi, steroids can create a proliferation of the organisms as well as disguise the infection.

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Topical corticosteroids have two basic anti-inflammatory actions on the skin. Initially, they create profound constriction of the cutaneous blood vessels. Second, they directly interfere with the inflammatory activities of polymorphonuclear leukocytes and monocytes. Corticosteroid preparations for topical use are classified as being of low, intermediate or high potency. The potency of a particular preparation is also related to the concentration of active drug in the vehicle. Mild steroids include Hytone cream 0.5 and 1.0 percent, Hebcort creams 0.5 and 1.0 percent, Cetacort cream 0.5 and 1.0 percent. Moderate strength steroids include Tridesilon cream and ointment 0.5 percent and Aristocort and Kenalog cream and ointment 0.025 percent. Among the strong steroids are Fluorobate lotion, gel and cream 0.025 percent, Fluonid and Synalar cream and ointment 0.025 percent, Cordran cream, ointment and lotion 0.05 percent, Valisone cream, ointment and lotion 0.1 percent, Halog cream 0.1 percent, Topsyn gel 0.05 percent and Diprosone cream, ointment and lotion 0.05 percent.

The nature of the drug vehicle significantly influences the potency of a topical preparation. Ointments represent the most efficient delivery system. Ointments occlude the skin and enhance hydration of the stratum corneum, thereby increasing its permeability. Second, in order of efficiency is the acetone-alcohol gel vehicle. Steroids are less soluble in creams and poorly soluble in lotions. The combined characteristics of drug potency and vehicle type should be used to advantage in clinical treatment. Ointments are most useful for thickened skin. The thin skin of the face is generally treated with a cream. Gels or lotions are used in the scalp or armpits where evaporation is less of a problem.

Low-potency steroids are used to treat the thin skin of the face, groin and genital area. Lotions are best for hairy areas. High-potency steroids are used primarily for dense plaques of psoriasis or a chronic dermatitis.

Topical corticosteroids are essential for the treatment of atopic dermatitis, nummular dermatitis and seborrheic dermatitis. Exacerbations of atopic dermatitis can be treated with brief courses of topical corticosteroids. Contact dermatitis is most responsive to topical corticosteroids. They relieve pruritus and thin plaques sufficiently to allow the institution of ultraviolet light and tar therapy. Chronic topical steroid therapy should be avoided in psoriasis.

Topical steroids are not indicated for the treatment of acne. They stimulate sebaceous gland activity and prolong the course of treatment.

The chronic use of topical corticosteroid therapy may initiate the thinning of the epidermis. Later sequelae of topical steroid use may be fine telangiectasias and striae formation. Prolonged contact of the conjunctivae with topical steroids may initiate glaucoma, cataracts and ocular infections. Short term use of corticosteroids topically may initiate Candida albicans overgrowth and secondary bacterial skin infections.

In general, start with mild steroids in low concentrations and increase the potency only as necessary. On the face and intertriginous areas use only nonfluorinat steroids. Prior hydration with bath or compress increases steroid penetration. Choose the vehic appropriate to stage (acute, subacute or chronic) a location of the skin problem.

Table 1
Amount of Steroids Needed for a Daily Application

Body Area	Amount in Grams
Head	1—2
Trunk (anterior)	3—6
Trunk (posterior)	3—6
Arms (each)	1—2
Legs (each)	1—2
Genito-Anal	1—2
Total body	15—30

Table 2
Side Effects of Topical Corticosteroids

Epidermal atrophy	Hypopigmentation
Striae	Telangiectasia, purpura
Hypertrichosis	Folliculitis
Miliaria	Candida
Exacerbation of acne	Increased vasculature

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Industrial Medicine

Reopening a Worker's Compensation Claim

Julie A. Doherty, Esq.

Under certain statutorily prescribed circumstances, a previously closed industrial claim may be reopened. If the claim is reopened, the employee is entitled to receive appropriate active medical and temporary disability compensation benefits.

Arizona law provides a claim may be reopened where the employee proves that since the date his claim was last closed, he developed a new condition, additional problems, i.e., an aggravation or worsening, or that a heretofore unknown condition has been discovered *and* that the current condition is related to the original industrial injury. In addition, when the true cause of a problem is not definitely known at the time a claim is closed and is subsequently discovered, that true cause is considered a previously undiscovered condition upon which a reopening may be based. A claim may also be reopened for an increase in subjective pain, even though there is no change in objective physical findings, provided active medical treatment is required.

When the basis of a reopening is a new or additional condition, the employee must prove a comparative change or deterioration in his condition between the date the claim was last closed and the date the claim is sought to be reopened. This comparative change requirement is not necessary where the basis of the petition is a newly discovered condition which was unknown and not considered at the time of the prior closing.

Legally insufficient bases to reopen a claim include: a) the relabeling of an old diagnosis; b) the availability of surgical procedures or medical treatment not offered the employee when the claim was last closed where th condition to be treated remains unchanged; and c) desire to investigate the condition to try to formulate a opinion or diagnosis for the condition.

In order to reopen a claim, the employee must tak the following steps. First, the employee or his lawy must file a petition to reopen the claim with the Indu trial Commission. Appropriate forms are available at th Industrial Commission and will be provided upo request; it is not necessary that this particular form b used, however. Second, the employee must obtain statement from a physician in support of the petitio This statement should describe the employee's physic condition as it relates to the industrial injury and must b filed within a reasonable time after the petition has bee filed. What constitutes a "reasonable" time has not bee firmly established. However, the courts have held a s week delay between the filing of the petition and th filing of the supportive medical report was not a unreasonable delay.

Although the medical report need not be exhaustiv it should compare the employee's present conditio with the condition that existed at the time the claim wa previously closed and otherwise establish, as describe herein, that a reopening of the claim is warranted.

The date upon which petition is filed is significant fo two reasons. First, if the claim is reopened, compensa tion benefits will be payable from the date the petitio was filed, not the date the condition giving rise to th reopening occurred. Second, medical benefits will b retroactive for nonsurgical medical treatment rendere within the 15 day period preceding the filing of th petition and thereafter. No medical benefits will be pa able for surgery performed prior to the date the petitio is filed.

Upon receipt of the petition to reopen, the Industri Commission will notify the insurance carrier or sel insured employer. The carrier or employer will have 2 days from the date of notification to accept or deny th petition. If accepted, appropriate medical and compen sation benefits will be payable. If denied, the employe must request a hearing within 90 days of the date th notice of claim status denying the petition is issue Should the petition proceed to hearing, the employe has the burden of proving an entitlement to a reopenin of the claim.

A clear, concise report which sets forth the medic basis for a claim's reopening is critical to the insuranc carrier's or self-insured employer's ability to analyze th employee's entitlement to the reopening of a claim. vague, ambiguous medical report may cause a petitio to be denied and result in litigation, all of which cou have been avoided by a specific, detailed medic report. Thus, the careful preparation of a medical repo benefits everyone involved in the reopening of a industrial claim in that it can expedite the acceptance o a petition and avoid the necessity of litigation.

From: Evans, Kitchel and Jenckes, P.C., 2600 North Central Avenue, Phoenix, Arizona 85004-3099.

Medical Genetics

ay-Sachs Disease: Part 1

he Risk to Non-Jews

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Tay-Sachs disease is a catastrophic metabolic disease infancy. It occurs in non-Jews and is rising in its rela- e proportion in non-Jews who are not usually eened for the gene. Tay-Sachs disease in its early stage ay present purely with apneic spells as early as seven ys of age.

troduction

In its classic form, Tay-Sachs disease affects infants. ey survive usually for several years, but never into olescence and adulthood.

The usual dictum about Tay-Sachs disease is that it is a wish genetic disease. In a sense, this is true. Tay-Sachs sease is relatively more frequent among Jewish than n-Jewish infants.

Things in many parts of the United States have anged with Tay-Sachs disease. Campaigns to detect rriers for the disease have been carried out for a cade or so among peoples of Jewish origin. Genetic unseling has been provided to these carriers. Prenatal agnosis has become available to the carriers.

The proportion of Tay-Sachs babies born to Jewish milies has consequently declined. No comparable cline in frequency has occurred among non-Jewish milies.

The purpose of this article, the first of two parts on Tay-Sachs disease, will be to present the case of an Arizona infant with Tay-Sachs disease. The child is not of Jewish descent. In the second and final part of this sequence of articles the current status of Tay-Sachs disease will be reviewed.

Case Report

A 14-month-old boy (Genetics Center No. 16479) was referred to the Genetics Center in Tempe in January, 1983 from Pilot Parents and CIGNA Health Plan for development delay and neurologic signs possibly due to Tay-Sachs disease. Pilot Parents, a lay parents' group concerned with counseling parents of handicapped children, had been contacted that same week by the boy's mother, while CIGNA Health Plan was responsible for the child's care under the Arizona Health Care Cost Containment System (AHCCCS).

History

This child was born at St. Joseph's Hospital in Phoenix on November 16, 1981 after what appeared to be a normal pregnancy. The mother went into spontaneous labor about four weeks early and delivered a six pound, six ounce boy. The baby appeared normal, except for a right clubfoot. The baby was fed by breast and developed mild neonatal jaundice, but did not require special treatment.

At seven days of age, the baby had an apneic spell. When seen by his pediatricians, he had additional apneic spells and failure to thrive. He was rehospitalized at Good Samaritan Hospital for about ten days and went home on an apnea monitor. The apnea monitor was utilized successfully for eight months.

The clubfoot did not respond fully to casting and in December, 1982 at 13 months of age surgery was done to correct the clubfoot.

The mother reported that the baby could crawl and rock back and forth on his knees, but was not sitting or standing or walking. Later there was total regression of the baby's motor skills. He was hypersensitive in terms of startle reflexes to sound and, in addition, had a poor suck.

The baby was seen by a physician who ordered a lysosomal enzyme screen. This revealed a profound deficiency of the enzyme hexosaminidase A (Hex-A) consistent with Tay-Sachs disease. The biochemical test result and the grim prognosis were conveyed to the mother.

Family

The mother is of Irish extraction. She was 37 years old at the time of her son's birth. By a previous marriage she had two normal daughters aged 12 and 13 years who were into adolescence (II-3 and II-4 in Figure 1).

The father of the baby is of English extraction (I-2). By a prior marriage he had a normal 18-year-old daughter (II-1).

There is no family history of birth defects, mental retardation or genetic disease. No Jewish ancestors are known in the father or mother's families.

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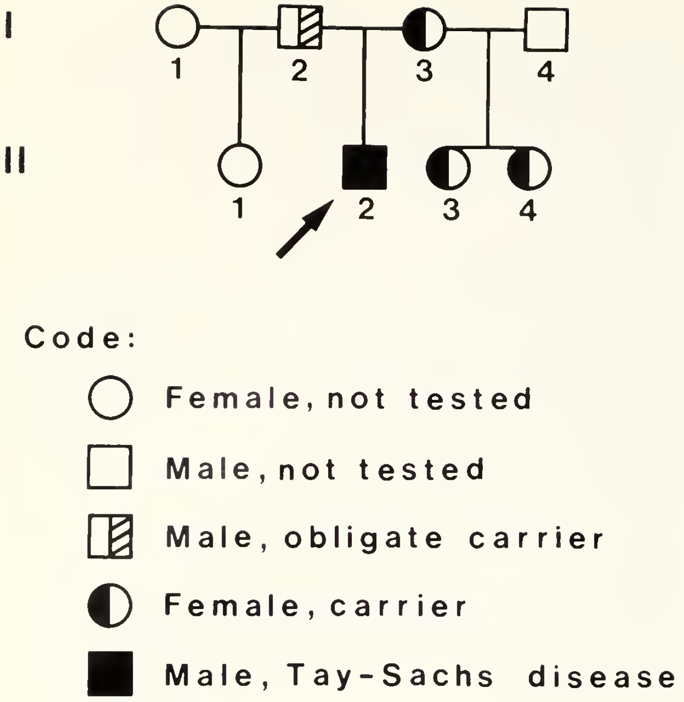

Figure 1
The family with Tay-Sachs disease. They are not Jewish.

Physical Examination

At 14 months of age, the patient appeared to be a happy child with red hair and blue eyes. At first glance he seemed not to be ill.

On physical examination, he was well nourished. His color was good and skin clear. On the eye examination there was a cherry red spot in the macula bilaterally. The balance of the physical examination was normal, except for neurological abnormalities.

There was spontaneous scissoring of the legs. All deep tendon reflexes were hyperactive. The big toes turned up spontaneously without contact with his feet.

Laboratory Studies

Blood was drawn from the boy, his sisters and mother for Hex-A assays. The father was not living with the family and was not available. The results presented in Table 1 from the Genetics Center Laboratory indicated that the boy had profound deficiency of Hex A indicative of Tay-Sachs disease, while his sisters and mother were carriers for the Tay-Sachs gene with approximately half normal levels of Hex-A in their white blood cells.

Genetic Counseling

We initially reviewed the diagnosis of Tay-Sachs disease with the family. They were counseled that the boy did have problems, but that biochemical confirmation of Tay-Sachs disease was needed. We consoled the family concerning the potentially fatal outcome. Following completion of the Hex-A studies (Table 1), we gave the confirmation to the family. Continuing support and care were provided to the family by Pilot Parents, CIGNA Health Plan, a pediatrician (Dr. Cecil Michael), a social worker (Ms. Mildred Boyd at St. Joseph's Hospital), Interfaith Counseling Service (Mr. Gary Creigy), Th Genetics Center and a number of the family's neighbor

Table 1
Key Laboratory Data on Hex-A Levels

Individual	Relation	Hex-A Activity (%of Normal)	Interpretation
I-3	Mother	46.9%	Carrier
II-2	Patient	6.7%	Tay-Sachs Disease
II-3	Sister	43.6%	Carrier
II-4	Sister	49.1%	Carrier

We referred the family when the boy was 20 mont old to Dr. Michael Kaback at Harbor-UCLA Medic Center in Torrance, California, who confirmed the dia nosis of Tay-Sachs in the patient, reviewed the fat outcome of the disease with the family and advised th mother to place the affected boy in a residential settin

Family Disintegration

The mother could not at that time bring herself t place her Tay-Sachs son in a residential setting outsid her home. She became significantly mentally ill wit depression and was hospitalized in a psychiatric uni Her elder daughter ran away from home.

The mother agreed to place her son in the Hacienc de Los Angeles in Phoenix. He is gradually dying.

Current Medical Status

Presently at two years, five months of age, the boy is resident of the Hacienda. He has a complex seizu disorder characterized by generalized seizures an myoclonic jerks. The generalized seizures are well co trolled with phenobarbital and diphenylhydantoi However, he has approximately 10 to 15 myoclonic jer per day.

On a gross motor level, he is now severely develo mentally delayed functioning with skills less than a no mal four-month-old child. He is blind. He is deaf. He increasingly lethargic. Over the past four months, h ability to feed himself has decreased and he has lost te pounds in that time period. He is now fed by others.

On physical examination, his height and head circu ference are within the normal range and his weight less than the fifth percentile for age. He is a red-haire pale infant who appears fussy. There is roving nysta mus. The pupils are equal, round and reactive to lig and accommodation. The funduscopic examinatio reveals an atrophic, pale disc with a cherry red spot i the macular area bilaterally. The chest is clear, the abd men is grossly distended and tympanitic with norm bowel sounds and no masses or tenderness. The extren ities are thin, the muscle tone is decreased and there spasticity of the distal upper and lower extremities wit out contractures. There is scissoring of the low extremities. The gag reflex is diminished.

Discussion

The Child: Classic Features

The presentation and course of Tay-Sachs disease i this child are in most respects typical. At first the chil ppeared normal. Development decelerated almost nperceptibly. It reached a plateau. There was gradual gression to a state of total helplessness.

The cherry red spot was seen in the macula on retinis-opy (which is not easy in the usual infant without anes-esia). Even the cherry red spot is *not* pathognomonic. occurs also in other lipid storage disorders.

The child became hyperreflexic and startled with ound. Then blindness and deafness supervened.

Death will predictably arrive before five years of age. It due usually to inanitition, aspiration, pneumonia or her intercurrent infections. No matter what is done to stain life, it ebbs away.

ne Child: Unusual Features

lubfoot: The initial unexpected feature was a club-ot. A positional deformity of the foot might occur with e prenatal onset of a neurologic disorder due to lack of ovements of the extremities. However, the clubfoot as a true one and required corrective surgery after sting failed to remedy it. The inheritance of clubfoot is olygenic. It is almost surely unrelated to the Tay-Sachs isease.

pneic spells: The second and more exceptional fea-re was episodic apnea beginning at seven days of age d recurring through early infancy. To our knowledge, ere are no reports of apnea at this age in children with ay-Sachs disease.

The metabolic disorder characteristic of Tay-Sachs dis-ase starts antenatally. No cell in the body before or after irth can process the lipid which accumulates anomal-usly in tissue including the central nervous system.

Apneic spells in infancy are known to be etiologically eterogeneous. They may occur familially and be heri-ble in certain kindreds. We would propose that one of e earliest manifestations of Tay-Sachs disease may be pneic spells seen after birth or within the first six or so onths of life. Accordingly, early Tay-Sachs disease may e one of the causes of apnea in infancy.

ay-Sachs Disease in Non-Jewish Children in Arizona

The population of the United States is only 2.6% Jew-h. This Jewish population is heavily concentrated in ertain cities such as New York and Los Angeles.

The Jewish population of Arizona is relatively small. ven in the Phoenix-metro area where there are a umber of synagogues, at most two percent of house-olds are currently Jewish.

Hence, although the Tay-Sachs gene is more frequent Jews than non-Jews, the composition of the popula-on in Arizona (and many other states) is such that a gnificant proportion of affected children are not ewish.

In Arizona, one can predict that *one-third (33%)* of ay-Sachs infants will be *non-Jews*. The calculations are ontained in Table 2. Clearly, the relative proportion of on-Jewish cases is on the rise, as more Jewish carriers re identified and counseled.

he Family

The consequences of Tay-Sachs disease in this family re, unfortunately, those seen with many fatal metabolic diseases: grief, familial disintegration, triggering of mental illness in relatives, and escape from reality.

Table 2
Tay-Sachs Disease in Jews and Non-Jews in Arizona

Group	Proportion of Population* (P)	Gene Frequency* (F)	Relative Gene Frequency* (P) X (F)
Jews	0.02	0.037	0.0074
Non-Jews	0.98	0.004	0.0039

*Approximate figures. The proportion of Jewish: non-Jewish cases of Tay-Sachs disease, disregarding screening within the Jewish community, is 2:1 so that one-third (33%) of Tay-Sachs children will *not* be Jewish.

Obstetrics & Gynecology

Fetal Echocardiography: New Horizons in Ultrasound

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Editor:
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The technology of ultrasound imaging has advanced rapidly in the past decade and is now a prominent part of obstetrical care. Information about fetal anatomy in ongoing pregnancies was necessarily minimal until non-invasive techniques such as ultrasound became available. Now an exciting collaboration between obstetricians, pediatricians and ultrasonologists in the prenatal diagnosis and treatment of the fetus can provide sophisticated care and deliver the healthiest neonates possible.

Two-dimensional (2-D) linear array and sector scanning of the fetus is used in many pregnancies to provide information about the number and lie of the fetus(es) and the estimated gestational age by biparietal, femur and abdominal measurements. Level I ultrasound examinations include these measurements, along with amn otic fluid volume estimation, placental grade an location, and general fetal anatomy, which shoul exclude anencephaly, advanced hydrocephalus, major anatomical anomalies. If abnormalities are su pected, a "Level II" ultrasound should be performed an ultrasonologist skilled in the detection of more subt and unusual anatomic abnormalities.

In 1980 at Arizona Health Sciences Center we began t include fetal cardiac examinations in our survey of no mal and abnormal fetal anatomy. This was possible onl with the interest and cooperation of three groups maternal-fetal medicine specialists, pediatric cardiolo gists and ultrasound specialists. We use 2-D methods t examine cardiac anatomy, add M-mode examinations t study chamber size, wall thickness and wall motion, an perform Doppler echocardiography to provide quant tative and qualitative measurements of blood flo through the cardiac chambers and major vessels. Fetuse are studied between 16 weeks and term, although th ideal gestational age for most studies is 26 to 28 weeks. A this time the fetus is large enough to rule out most majo anomalies, but small enough that less shadowing fror the spine and ribs occurs and multiple positions ar assumed by the fetus, allowing a more complete exami nation. We will generally obtain a 4-chamber view (Fig ure 1) which provides information about the right an left ventricles, the tricuspid and mitral valves and th ventricular and atrial septae, along with the forame ovale. The aorta and pulmonary artery are imaged i either the short-axis view (the aorta is central with th pulmonary artery encircling it) or the long-axis vie (showing inferior vena cava, aortic outflow and pulmo nary artery). Finally, the aortic arch is imaged, and, possible, the arch which is formed by the pulmonar artery, ductus and descending aorta.

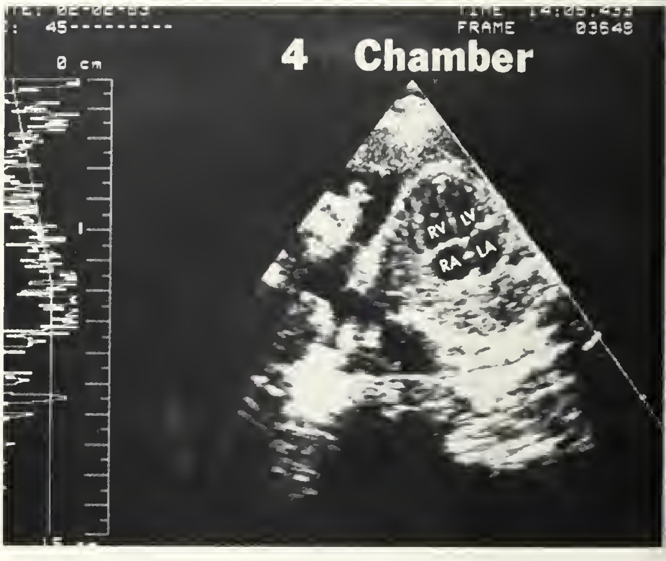

Figure 1
Four Chamber View of the Fetal Heart.
RV: right ventricle - LV: left ventricle - RA: right atrium - LA left atrium.

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Table 1
Candidates for Fetal Cardiac Ultrasound

History of congenital heart disease
Maternal disease (especially insulin-dependent diabetes)
Drug/teratogen exposure
Abnormal fetus

tudy Population

Four groups of patients are studied routinely (Table 1). he first and largest group is that of the mothers who ave a history of congenital heart disease, either them- elves, in a previous child, or in a family member. Recur- ence of congenital heart disease in this group ranges rom 4 percent to 50 percent, and these women are often cutely aware of the problems associated with congeni- al heart disease and the availability of diagnostic echniques.

A second major group we study is comprised of omen who have diseases which predispose to congen- al heart disease. Insulin-dependent diabetics form a ajor part of this group, and have an increased likeli- ood (three to four times normal) of having a child with major congenital defect, of which 30 percent are car- iac.[1] Other maternal conditions which can contribute cardiac disease in the fetus are isoimmunization, asso- iated with pericardial effusions and ascites in affected etuses; connective tissue diseases, such as systemic upus erythematosus, in which fetuses are at increased sk for congenital heart block; and maternal phenylke- onuria, which is associated with congenital heart dis- ase in the offspring.

A third group studied are fetuses exposed to drugs or gents associated with an increased risk of cardiac bnormalities, such as rubella, alcohol, lithium or anti- pileptic drugs. In addition, we offer examinations to omen exposed to drugs which may alter the function, not the anatomy, of the fetal heart, such as propranolol r other antihypertensive drugs, or ritodrine or other ocolytic agents.

Finally, we study fetuses which are suspected to be bnormal on the basis of growth abnormalities, amniotic luid volume, ultrasound examinations, amniocentesis, r auscultation of an arrhythmia. There has been an nterest in providing treatment to abnormal fetuses; an ssential part of the workup of these fetuses is a careful ltrasound examination to discover other abnormalities, ncluding abnormalities of the fetal heart, which might lter treatment.

Table 2
Common Fetal Cardiac Lesions Diagnosed

Hypoplastic left heart
Large ventricular septal defect
Hypertrophic cardiac myopathy
Tetralogy of Fallot
Cardiac tumors
Coarctation of the aorta
Pericardial effusion

Lesions Diagnosed

Any congenital heart lesion diagnosed in infancy can potentially be diagnosed *in utero*, and most have already been reported. The most frequently diagnosed lesions are listed in Table 2.[2] The fetal heart does differ from the neonatal heart in several ways, however, and this makes some lesions difficult or impossible to diagnose. Both the atrial septum and the ductus arteriosus are normally patent in fetal life, and the postnatal persistence of these cannot be predicted by current methods. In addition, minor valvular abnormalities, small ventricular defects, and many variations of anomalous pulmonary venous return are beyond current diagnostic capabilities of most ultrasound equipment and examiners (Table 3).

Table 3
Fetal Cardiac Lesions Difficult to Diagnose

Patent ductus arteriosus
Small septal defects
Minor valvular abnormalities
Anomalous pulmonary venous return

In summary, the advancement of ultrasound technology and the team cooperation of specialists in fetal medicine: the obstetrician, pediatrician and ultrasonographer, have made possible sophisticated diagnostic techniques and ultimately fetal treatment. One area which has particularly advanced is that of the fetal cardiac examination. The four groups recommended for fetal cardiac examinations are those with 1) a history of congenital heart defects; 2) maternal diseases, especially insulin dependent diabetes; 3) those exposed to known teratogens; and 4) abnormal fetuses.

Studies can be performed as early as 16 weeks gestation and as late as immediately prior to delivery. While many major congenital abnormalities can be diagnosed, others are difficult or impossible to diagnose given the differences in fetal anatomy and current limits of resolution. It is essential to have the cooperation of experts in the area to provide the most accurate and advanced diagnostic capability and treatment possible.

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*Oncology/
Hematology*

Heroin: Should It Be Legalized for the Treatment of Cancer Pain?

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In 1983, Senate and House bills were introduced in the 98th United States Congress to provide for the legalization of heroin for treatment of pain in terminally ill cancer patients. The Senate Bill states that:". . .

1. a significant number of terminally ill cancer patients suffer from pain which is not effectively treated by currently available analgesic medications;
2. heroin has proven efficacy as a pain killing drug for such patients; and
3. it is appropriate to establish a temporary program to provide, through qualified hospital pharmacies, heroin for the relief of pain of cancer patients."

No health professional can deny the good intentions and compassion demonstrated by the introduction of these bills. Most health care providers have dealt with patients who have suffered from severe cancer-related pain. In some studies, 60% to 80% of patients with advanced cancer suffer from pain. Despite the many advances in the treatment of some types of cancer, little progress has been made in the treatment of cancer-related pain. Because cancer, pain, and heroin are issues that are emotional, it is important to examine the scientific evidence that supports the use of heroin over currently available drugs and to consider other issues that would be related to the legalization of heroin for medical purposes.

Heroin, also known as diacetylmorphine or diamorphine, is a narcotic that is virtually identical to morphine in pharmacologic action.[1] Both drugs affect the same area in the central nervous system, and heroin primarily is converted to morphine by hepatic metabolism. Heroin, however, is much more soluble in water than morphine, meaning that a smaller volume of heroin would be injected into a patient requiring a very large parenteral dose. This solubility of heroin is also the major reason for its widespread illegal use as the preferred narcotic in addicts. Heroin is approximately five times more potent than morphine, meaning that a larger dose of morphine is required to achieve a similar effect. It is important to realize that potency in no way affects therapeutic efficacy. There are currently marketed analgesics with a similar degree of solubility and potency as heroin, including hydromorphone (Dilaudid®) and oxymorphone (Numorphan®). Neither of these agents has been compared to morphine or heroin in the treatment of cancer-related pain. Hydromorphone hydrochloride recently was cleared (Dilaudid-HP®) as a 10 mg/ml injectable solution, further reducing the need to use heroin because of solubility.

Despite the availability of potent, soluble injectable narcotics, these agents usually are not needed since the regular administration of an oral narcotic, such as morphine or methadone, usually is effective.[2-4] Injectable narcotics are needed only in patients with severe nausea and vomiting, or during the last few hours of life. In patients requiring injectable narcotics, a continuous intravenous or subcutaneous infusion of morphine may be preferred,[5] minimizing the issue of drug solubility. With continuous parenteral morphine, there is less fluctuation of analgesic effect and toxicity, a lower total dose is required, and the effects of repeated injections such as pain, abscess formation, and bleeding are avoided. An alternative to injectable narcotics in a vomiting patient is the rectal administration of morphine or hydromorphone suppositories.

Several scientific studies have been performed that compare the analgesic efficacy of morphine and heroin. Twycross, one of the pioneers of the hospice movement in England,[5,6] concluded that morphine is comparable to heroin in a double-blind crossover study in patients with cancer-related pain. Interestingly, male patients in this study had more pain and depression while on heroin while, in female patients, there was no difference between the two drugs. Kaik et al.[7] evaluated heroin and morphine in postoperative cancer patients and found that heroin was more potent and had a faster onset of action, but a shorter duration of action than morphine. Overall, there was no significant difference between heroin and morphine in relieving pain in this study. Many other studies and papers have been pub-

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shed over the past 25 years indicating equivalent anal-esic efficacy of morphine and heroin.[8-14]

In addition to the scientific issues involved with the se of heroin, several other issues must be considered. /hile it appears that heroin is equivalent to morphine, eroin has not been extensively studied as an analgesic n the United States for safety and efficacy. Also, com-arative studies have not been performed with heroin nd methadone, hydromorphone, or oxymorphone. he United States Food and Drug Administration would e the logical agency to direct the scientific study of eroin as an analgesic.

Since the proposed legislation would have heroin dis-ributed through hospital and community pharmacies, ne impact of the availability of heroin in pharmacies nust be considered. At this time, burglaries of commu-ity pharmacies are common, while hospital pharmacies ave remained relatively secure. It is likely that with the vailability of heroin, the potential for violent crime ccurring in pharmacies would increase, jeopardizing ne safety of pharmacy employees and patients alike. lso, the potential security risk of patients having heroin n their homes must be considered. It is not known what ffect the availability of heroin would have on the inci-ence of drug abuse by health professionals.

The treatment of cancer-related pain is a complex sue[15] that includes both scientific and emotional fac-ors. Unfortunately, research in this area has lagged ehind other types of cancer research. However, with ne advent of the hospice movement,[16,17] clinicians are ecoming more aware of the problems and techniques f treating patients with cancer-related pain. Pain in ancer patients serves no purpose and, therefore, it hould be aggressively treated. The chronic pain seen in ancer patients is modified by concomitant anxiety and epression, both of which increase the perception of ain. The anxiety is especially heightened by the fear of npending pain, caused by underutilization of analgesic rugs. The mainstay of therapy for severe cancer-related ain is the narcotic analgesics given at regular intervals n a dose sufficient to relieve pain without causing ndue toxicity.[18] It does not appear that there is any lifference in efficacy among the narcotics that have een studied. Other types of analgesics, such as the ionsteroidal anti-inflammatory agents, may be useful, specially in patients with bone pain due to metastatic lisease. In patients with severe anxiety or depression, udicious use of a psychotropic drug, along with psycho-ogical support, may be very helpful. The treatment of hese patients must be flexible, designed to achieve naximum pain relief and preservation of the patient's ife-style.

On the basis of available scientific evidence and the considerations previously discussed, the Arizona State Council of Hospital Pharmacists has adopted the follow-ng position:

1. Because of the lack of therapeutic advantages over currently available narcotics and the potential security risks to patients and pharmacy personnel, heroin should not be legalized for use in treating cancer-related pain.
2. Health professionals with experience in the area of chronic pain therapy should inform and educate clinicians concerning the rational drug therapy of severe cancer-related pain.
3. Oral administration of morphine or methadone on a regular basis will provide most terminally ill patients with relief from severe chronic pain and decrease fear that the pain will recur. The drug treatment of these patients, including drug administration, dose, route, and frequency must be flexible and based upon the needs of the patient.
4. Narcotic analgesics should not be underutilized in patients with severe cancer-related pain since the potential for addiction is of no consequence in the terminally ill patient.
5. Health professionals, government, and industry must expand research in the area of treatment of cancer-related pain.

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Psychiatric Disorders

Fluency and Fantasy

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"I am unutterably sad." So wrote a friend. Why did he write? Because no one listened when he spoke! His plight brings to mind a major source of human illness and untimely death: inability to express one's self.

It is true that some human feelings are unutterable, just cannot be reduced to words. One can be struck dumb by the enormity of sorrow or fear or shame or outrage or ecstasy or awe. We turn then to gestures and to atavistic posturings. On a broader scale we engage mime and the dance, music and sculpture and paintings, icons and archetypes. Intermediate, of course, are poetry and drama and some of the products of cinema an television.

Our language is still strewn with anatomical metaphors: heartache, a pain in the neck (or below, as i coccygodynia, hurting in the tailbone), inspiration, col feet. One says, "I can't stomach that," or "He is losing hi grip," or "That makes me sick."

Other metaphors and similes serve to keep our discourse grounded in visible, sensible reality: slow a molasses, sturdy as an oak, wise as a serpent or ow fierce as a lion, stubborn as a mule. All of these com before literacy and there is no call for literacy to supplan them. They do stimulate at least a little imagination.

Such are more or less conscious and voluntary mean of communication. Unconscious and indirect ways o trying to express one's self are more often pathogenic They comprise dreams and hysterical conversions an phobias and compulsions, and such exaggerated an undesirable personality traits as the schizoid or narcissistic or passive-aggressive.

Take for a crass example the dead battery of communication in the catatonic. He is mute and expressionless, and his limbs can be molded (like wax, cere flexibilitas) into any pointless and uncomfortable position. He is telling himself and us: "If anything I say an everything I do is wrong, then I had just as well freeze." Anticipation of constant contradiction and criticism ca do that to any of us.

The nethermost levels of communication are psychosomatic. What cannot otherwise be expressed (as i juice from a fruit or in elimination) is retained and wil ferment and putrify and distend. The architecture o encephalization, evolution, betrays how far remove from candid speech or writing some inadmissible message might be. Nearest and therefore cephalad is headache. Next comes painful cervico-occipital tension, the cat arching its neck when confronting a dog. Everyone i familiar with the hiccough or lump in throat (globus) o tears that won't come. Heartache is a literal translation o organ language. Then we have the hyperventilation o boredom or oppression or the unrelaxing valves of esophagus and stomach and the acid bitterness of ulcers. Sufferers from regional ileitis and spastic colon surely understand the old and earthy admonition: "Don't get your bowels in an uproar."

A highfalutin' technical term is alexithymia. This means the inability (or unwillingness) to express one's self, especially one's feelings, directly and in words. For quite complicated reasons there is an associated dearth of imagination or fantasy.

A modern trend (really a cycle) is away from the internalizing of conflict into neuroses or psychosomatic disorders. Instead we see symbolic "acting out." Examples are promiscuity and compulsive gambling, alcoholism and homosexuality, senseless murders and feral rapes. Be reminded: Without imagination there is no sympathy. This is one of the essential defects in the character of the psychopath.

May we pause to dramatize other costs of the inability

From: 4910 North 44th Street, Phoenix, Arizona. Reprint requests to William B. McGrath, M.D., 4910 North 44th Street, Phoenix, Arizona 85018.

express one's self; namely, those imposed on animate reatures from the outside?

1. Our indifference to the terror and torture of live ait or our smug enjoyment of the lobster's being boiled live. Consider the living death of geese force fed for ate.

2. Our glee at prolonging the fatal defeat of the mar- n or bass or trout; or the sacrificial bull in the corrida.

3. The whip and the spur and the goad with which we reak the spirit of any dumb animal.

4. The gagging of the victim who has to be thereby ehumanized before the torturer or executioner or apist can proceed.

5. Our habitual indignities toward the individual hose ability to protest has been damaged by strokes or enility.

6. Our attitudes of superiority and impatience toward ne foreigner who has limited command of our nguage.

In each of these illustrations the "invitation" to brutal- y is the absence of facial expression or communicating esture or verbal protest.

Conversely, the individual who can express himself eadily and effectively will be shown respect in situations hen it is most welcome, such as on the witness stand or any kind of interview or presentation. Since the prolif- ration of synthetic fabrics and machine-made clothes a entlemen is no longer recognized by his haberdashery. lence, in this regard, fluency has replaced elegance of ress.

The reverse of encephalization and reasoning results some silly regressions. Pictographs are replacing lphabetical instructions in traffic signals. At the inter- ection a neon hand pops up and I automatically wave ack. So-called "punk" musicians adopt transvestite or eliberately degenerate appearances. Commercials to e "catchy" have to be loud and rhyming and asinine nd as devoid of meaning as possible. "Brings good hings to life," or "In pursuit of excellence" (which nplies that excellence has yet to be attained!). The iggest box office successes leave absolutely nothing to ne viewer's imagination; the patrons are patronized nd buy a lot of popcorn.

The converting of body language into verbal reason- ng is, of course, the raison d'etre of psychotherapy. The tarting point of physical and mental and spiritual heal- ng has always been: Know thyself. But one cannot know ne's self if one lacks the verbal skills to carry on an nternal monologue, a soliloquy. One must be able to nd words for one's experiences and thoughts and feel- ngs in order to evaluate them and encode them in nemory. The mind solves problems, resolves conflicts, nly by manipulating symbols, identifying and sorting hem, arranging them in sensible forms and logical equences. The best symbols, of course, are words and ne most advanced system is still simply syntax.

Recent emphasis on the "basics" and therefore on eading and writing ought not overshadow the impor- ance of eloquence, as in teaching of recitation and elocution and debate. Speech, with inflection and accomplished by gestures, has the added advantage of immediacy and transactional correction. Among adults it is rare to hear of anyone less than enthusiastic about Toastmasters or similar organizations.

Reading itself should be critical, not just passively acquiescent. The father of a scholarly friend used to require of him to mark in the newspaper, especially in the editorials, every fallacy and non sequitur and ambiguity. Inspirational and "How to" writings abound with pious untruths: "With positive thinking or the right kind of incantation or affirmation you can have anything you hope for or dream about." It is perhaps wiser to be a bit cynical than to experience the crashing disillusionments of people who are beguiled and who beguile themselves with nonsense mottoes and slogans and magical gimmicks.

Of inestimable value is exposure to General Semantics. The publications of The International Society for General Semantics can be obtained from P. O. Box 2469, San Francisco, California 94126. A good introductory book is "People in Quandaries" by Wendell Johnson.

Writing, of course, is one of the best ways to get to know one's self and to keep one's thoughts and feelings in clear perspective. Sorely neglected in our time is letter writing: correspondence is (also) synonymous with consistency and agreement. A professional man is not likely to keep a diary or journal because he will have been dictating most of each day's work into formal records. Case reports of any kind can be mental calisthenics, disciplining the logic and truthfulness of one's statements, improving vocabulary, exercising imagination and sharpening observations. So-called power of observation begins with the pleasantly challenging question: How can I describe this person or event so that others will recognize it and I will remember it?

Description itself often boils down to a related question: What does this remind me of? This is the point at which the ability to express one's self requires the cultivation of imagination. Disregarding speculations about right or left hemisphere dominance, both the child and the adult can learn to fantasize—and must! Interpretation of (Rorschach) ink blots would illustrate an excellent exercise.

Horror movies and "explicit" books do not create a world of make-believe, except for their juvenile producers. On the contrary, they spoon feed predigested baby food to the passive viewer. The children who used to read Grimm's fairy tales or Hans Christian Andersen were creating their own monsters and heros and princesses. The ancients who gave such vivid names to the constellations and those people who can still see imaginary animals in the clouds have something in common: the human ability to express themselves and to correspond with others.

The circle closes. Without imagination there is no sympathy. If you cannot ex-press or explain yourself then you cannot expect understanding or compassion—even from yourself!

Radiology

Case of the Month No. 73

Bradley S. Hulsey
Jonathan M. Levy, M.D.
Robert G. Leon, M.D.

Editor:
Jonathan M. Levy, M.D.

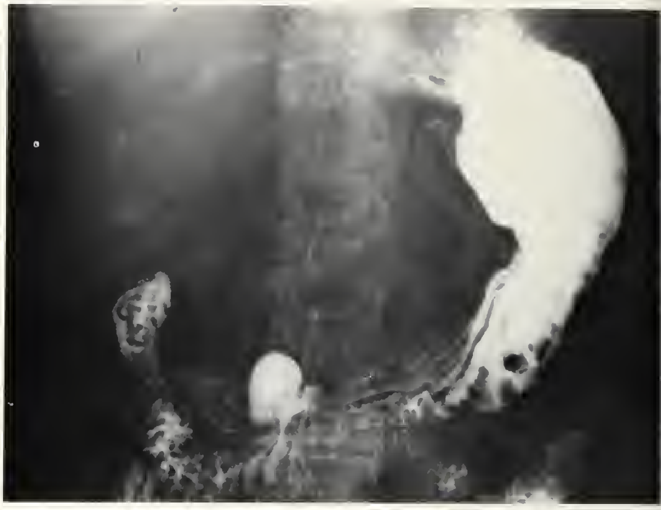

Figure 1A
Film from Upper GI series.

Answer on page 609

A 72-year-old lady had epigastric pain and difficulty swallowing. She had no nausea, vomiting or diarrhea. An Upper GI series was done. (Figures 1A and 1B).

What is the diagnosis?

How would you treat this lady?

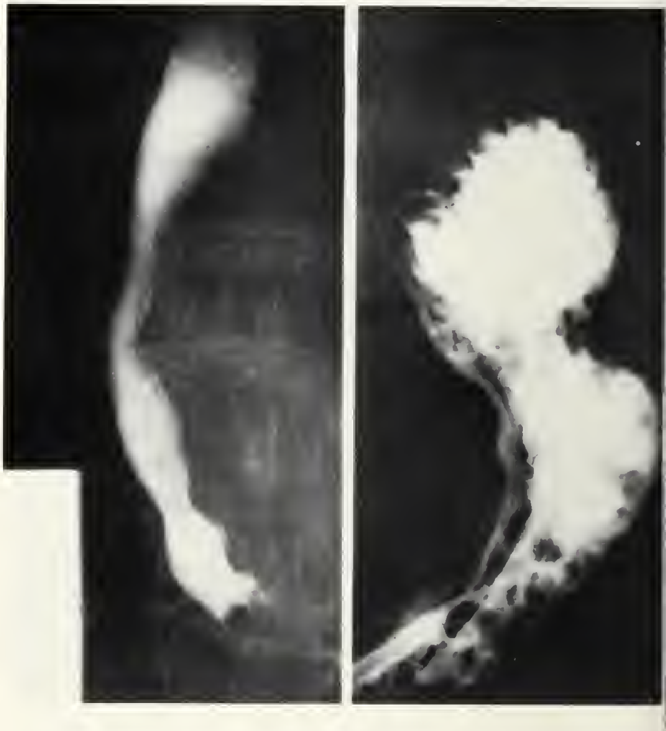

Figure 1B
Fluoroscopic spot film of stomach (right).

From: The University of Arizona School of Medicine (BSH), and the Departments of Diagnostic Radiology (JML) and Gastroenterology (RGL), Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251. Reprint requests to Jonathan M. Levy, M.D., Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251.

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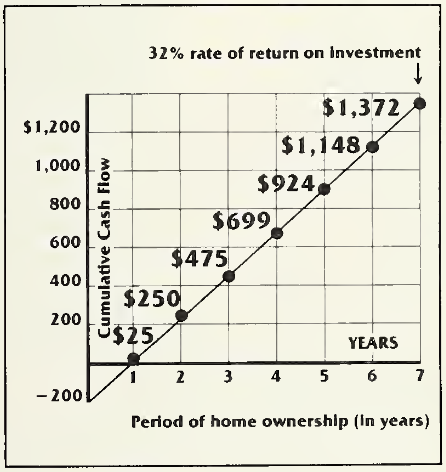

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J-4044 January 1984

Answer:
Multiple gastric polyps

The Upper GI examination (Figure 1) demonstrates multiple lucent filling defects in the stomach. Ingested material (e.g. small berries, nuts) can produce this appearance, but such material is moveable with palpation of the stomach. Multiple leiomyomas or Menetrier's disease may simulate this appearance, but the lesions are usually of widely varying size. The finding of smooth, uniform, non-displaceable filling defects is typical of multiple gastric polyps.

Gastric polyps are found in 0.5% of unselected autopsies. They are more commonly seen in association with atrophic mucosa and in achlorhydric states. Two types have been described. The hyperplastic polyp represents 70% to 80% of lesions, and consists of well-differentiated branching with normal cell architecture. Metaplasia may occur in these polyps, but it remains focal. They are not considered to have significant malignant potential.

The adenomatous polyp represents less than 10% of gastric polypoid lesions. It is made up of tall columnar epithelium without chief or parietal cells. In contrast to the smooth hyperplastic polyps, these have irregular, lobular surfaces with deep fissures. Adenomatous polyps have a definite malignant potential, and the frequency of carcinoma developing in these lesions has varied from 4% to 35%, depending on the series. Most single gastric polyps are asymptomatic, though occasionally bleeding with resultant anemia may occur. The malignant potential increases if the size of the polyp base is greater than 2 cm., or if there are multiple polyps.

Multiple polyposis in the stomach is rare (3% of gastric polyps). It may be associated with Peutz-Jegher's syndrome or familial polyposis, or can occur as an isolated finding. The polyps can be either adenomatous or hyperplastic in type. With multiple polyps, achlorhydria is almost universally present. Pernicious anemia and gastric mucosal atrophy are also present in many cases. Upper abdominal pain, unrelieved by antacids, is not unusual.

Gastric polyps should be excised or biopsied for histologic examination. The endoscopic removal should include all polyps, if possible. If the polyps are hyperplastic, the patient may be followed. If adenomatous polyps are discovered, however, the patient usually requires more aggressive treatment. In some cases, total or subtotal gastrectomy is indicated. Our patient's polyps were found to be hyperplastic in type, though all the polyps could not be biopsied or removed. Because of her age and the biopsy findings, she is currently being followed.

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Special Articles

Private Voluntary Care For the "Notch Group:" The St. Elizabeth's Clinic Experience

Ronald E. Pust, M.D.
Lianna M. Edwards, R.N., F.N.P.
Augusto Ortiz, M.D.

Abstract

Since 1961 the Catholic diocese of Tucson has operated the St. Elizabeth's Clinic for those with income just above the eligibility level for county or AHCCCS-financed care. Since 1980, a family medicine clinic at St. Elizabeth's has increased the continuity and flexibility of care. A series of 6,802 patient encounters shows that the two family physicians and a nurse practitioner treat a typical spectrum of primary care problems.

While this model of service has been successful, the growing monetarization of medicine makes it imperative that additional federal, state and local resources be committed to the care of the expanding number of the medically poor.

Key words: Health care; medical economics; health insurance; family practice; nurse practitioner.

Medical Care for the "Notch Group"

With medical care costs rising at twice the inflation rate, the proportion of marginal income families unable to afford medical care without third-party assistance is increasing. Because the income eligibility ceiling (e.g., \$5,354 for a family of four) of the Arizona Health Care Cost Containment System (AHCCCS)[1] is considerably below the Federal poverty level (\$9,900 for the same

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From: Department of Family and Community Medicine, University of Arizona College of Medicine, Tucson, Arizona 85724, and St. Elizabeth of Hungary Clinic, R. E. Pust, M.D., Family Medicine Clinic Director, 140 West Speedway, Tucson, Arizona 85705. Reprint requests not available from the authors. Opinions are those of the authors and not necessarily those of the Department or Clinic.

family), a large so-called "notch group" exists between these two income levels. With total *per capita* U.S. health expenditures reaching $1,365 in 1982, the potential for financial disaster among the uninsured working poor whose incomes are in this "notch group" are obvious. In 1981, Pima County had an estimated 88,516 persons below the Federal poverty line, of which 61,000 were below the Pima County indigent health care income standard, leaving a "notch" group of 27,494. In practical terms, as medical care costs continue to rise, the Federal poverty guidelines traditionally defining the "notch group" ceiling grossly underestimate the number at risk for financial disaster due to these costs.

Though the size of this arbitrarily defined notch group has changed since 1961, the mission of Tucson's St. Elizabeth of Hungary Clinic has not. Founded in that year and operated since by Our Lady of Victory Missionary Sisters through the Catholic Diocese in Tucson, the St. Elizabeth Clinic began with five members of this Order. The Clinic relies on the voluntary efforts of physicians regardless of creed for medical staffing. It seeks to increase health care access, broadly defined.[2] Because AHCCCS did not decrease the size of the notch group in Pima County, St. Elizabeth's Clinic has chosen to maintain service to that group rather than participate in AHCCCS. Although the Clinic individualizes its financial eligibility ceilings, the majority of families it serves are in the notch group defined above. In addition to being poor, half of the Clinic's patients are either children under 18 (28%) or adults above 65 (21%). Because of the vulnerability of such patients, a wide variety of social services are integrated into their health care, including the Friendly Visitor Program for the elderly and disabled, a home health program, the Family Resource Center, and social service counseling, including referral to other agencies.

The medical and dental departments provide a full range of traditional specialties. The larger volume specialty clinics are held at least weekly at St. Elizabeth's itself; consultations at the same fixed low patient fee are available at the offices of volunteer subspecialists. Collectively, all St. Elizabeth departments provided for 3,034 new patients and a total of 23,431 visits in 1982. The 250 volunteer physicians and dentists average three to five half days of St. Elizabeth service per year.

Family Medicine at St. Elizabeth's Clinic

To further improve continuity and coordination of care, the Clinic contracted in September, 1980 for a nurse practitioner and a faculty family physician from the Department of Family and Community Medicine at the University of Arizona. In providing family medicine clinics each weekday morning (except for an evening clinic on Thursday for working people) the Department sees the St. Elizabeth Clinic as a proper locus for its full range of university functions of service, teaching, and research. While focusing on continuity of care through the faculty nurse practitioner or physicians, St. Elizabeth's is one of 14 community clinics where third-year medical students may choose to serve their required six-week clerkship in family medicine. Since it emphasizes comprehensive care, the Clinic is an ideal site at which to introduce these future physicians to the role of community agencies in providing health related services. Because of the limited resources of its clientele, teaching cost containment while providing quality care is not only a priority[3] but also a daily mandate.

In order to characterize the patients, providers' services, and diagnostic problems encountered in this unique family medicine setting, data on patient encounters from January 1981 through August 1983 were analyzed. If the AHCCCS Program which was implemented on October 1, 1982, was to affect the notch group as served by the St. Elizabeth Clinic, this effect should be apparent during the period studied.

Patient Characteristics

Time: Between January 1, 1981 and September 30, 1983, there were 6,802 family medicine patient visits, an average of 206 per month. A gradual decline in the monthly, from 202 in the twelve months prior to AHCCCS implementation on October 1, 1982, to 190 per month in the year following continued a trend that began with 231 per month from January through September 1981. The proportion of first time visitors to St. Elizabeth's (24.8%) was nearly constant during the three time periods. Since October 1983, there has been an upward trend in total patient visits.

Place: St. Elizabeth's Clinic is located one mile north of Tucson's downtown center. The addresses of 56% of its patients were in postal zip codes within five miles of the Clinic. Another 14% were from the relatively low income south side (zip codes 85706 and 85745). Nineteen percent were from the somewhat more affluent and densely populated area east of Alvernon Road, while only 3% came from the affluent newer northwest sections (codes 85704, 85741 and 85743). Included in the 8% from outside metropolitan Tucson were 2.4% from Mexico. There was no significant difference in zip code origin between the family medicine and the general St. Elizabeth patient populations. This spatial distribution of patients, which did not change after AHCCCS was implemented, probably represents a summation of the effects of population density, poverty, and proximity to the clinic.

Person: Consistent with the national 2:1 sex ratio among primary care patients, 68% of the family medicine patients were female. Other than among children (nearly half of whom were seen by the weekly pediatric clinic), the age distribution of the family medicine patients was similar to that of the total Clinic clientele and of typical primary care patient panels in the United States. Hispanic surnamed patients make up somewhat, but not predominantly, more of the Clinic's patients than the one-quarter in the Tucson populace.

Provider's Case Loads: The family nurse practitioner (FNP), who is present at all five weekly half-day family medicine sessions, was the provider in 40% of the encounters. Consultation with the two family physicians (one is always present) is constantly at hand, but rarely slows patient flow. The FNP, a woman, had a higher proportion (3:1) of females in her practice than the physicians, who are men. The mean age (48 years) of the older physician's patients was significantly higher than the mean patient age of the other two providers (38 years for both).

Diagnostic Case Mix: Of the primary diagnoses listed (from the ICD-9-CM coding system) for each encounter, the ten most common, and their frequencies, are: hypertension, 12.7%; medical examination, 6.2%; diabetes, 4.9%; vaginitis, 3.6%; upper respiratory infection, 2.8%; abdominal pain, 2.7%; otitis media, 2.5%; urinary tract infection, 2.3%; osteoarthritis, 2.1%; and back pain, 2.0%. The next twelve most frequent were, in order: cervicitis, depression, headache, dizziness, limb pain, well baby care, bronchitis, pharyngitis, obesity, asthma, debility, and hay fever. These 22 categories accounted for 57.6% of the first listed diagnoses. Compared to those of the physicians' encounters, a higher (P .01) proportion, 66.2% of the FNP diagnoses were among these 22 rubrics. Probably due to the higher proportion of women among her patients, she was more likely to diagnose vaginitis. Other than this, there were no major differences in the diagnoses reached by the FNP compared with those of the physicians. The 22 listed diagnoses are among the 50 most common in other family practice series.[4] Obstetrics and trauma were seen rarely due to alternate Clinic arrangements during this period.

The Future of Health Care for the "Notch Group"

Since inflation adjusted health care costs are rising faster than *per capita* income, it follows that the proportion of the population that is unable to afford such care in the absence of third party payors will inevitably rise as well. Yet, among the several potential ways of containing the rising costs of the Arizona Health Care Cost Containment System itself, none is more tempting than decreasing the number of Arizonans eligible, recently estimated to be 223,000.[1] Indeed, this is one of the stopgap measures proposed in April 1984 by the State Legislature. The inevitable result of these two trends, it would appear, is a widening of the medical "notch" (defined by income) at both ends and thus an increase in the "notch group." While the conclusion is inescapable that the medical "poor you shall always have with you," it is by no means as obvious what action the Federal[5] or state[1] government or the individual physician[6] should take. Responses may well depend on whether health care for the poor is seen as an option of charity or an obligation of justice, i.e., whether health care is a privilege or a basic human right.

Regardless of whether the continuing motivation for the existence of clinics such as St. Elizabeth of Hungary is charity or justice, the more immediate question for such clinics is how well they can meet the health care needs of the "medically poor," both in quality and total patient load. Data in this study do not address the quantity aspect fully, primarily because the Family Medicine Clinic at St. Elizabeth's utilizes only 0.1% of the physicians in Pima County. Other facilities serving the notch group, such as the El Rio Neighborhood Health Center, are able to serve a much larger number of patients; however, most of these are ultimately at public subsidy. As attractive and efficient as it is to institutionalize voluntary medical charity through clinics such as St. Elizabeth's for larger metropolitan areas, it is difficult to conceive its expansion, diversification, or location to meet the current or potential need. The most obvious alternatives are an increase in voluntary fee reduction and accessibility of private physicians to the medically disenfranchised or a re-expansion of the proportion of the lower income population eligible for government health care programs, whatever their ultimate financial sources or incentive mechanisms. The former choice may be naive in view of the growing monetarization of medicine.[7] The latter, which many thought could proceed to national health insurance after the introduction of Medicare in 1965, is all but dead until medical costs are contained.

Nonetheless, quality of care, as defined by comprehensiveness, accessibility and continuity, appeared to improve with availability of the Family Medicine Clinic to those patients the St. Elizabeth Clinic is able to serve. The major remaining barrier to further improvement in these three aspects of quality is the lack of financial coverage for hospitalization of St. Elizabeth patients, who must depend on a variety of *ad hoc* teaching-bed and charity arrangements. As hospitals which have been helpful to the Clinic feel the cost squeezes of competition and DRGs, their voluntary or Hill-Burton obligatory charity may be more difficult to count on. Despite prognoses of the impending death of the nurse practitioner era,[8] the concept has flourished at the St. Elizabeth Family Medicine Clinic, where the FNP remains a major provider, making similar diagnoses and providing equivalent therapies to those of the faculty physicians.

Thus, while quality care can be provided at relatively low cost the limited number of patients served by facilities such as the St. Elizabeth of Hungary Clinic, it is unlikely that such voluntary charity efforts by themselves can meet the total needs of medical care for the "notch group." Thus, we should continue to explore other approaches[9] which will supplement the work of a clinic such as St. Elizabeth's.

Acknowledgement: Sister Rose Miller, O.L.V.M.S., Director of the Clinic, supplied helpful data. The entire clinic staff continues to provide valuable patient care.

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A Legislative Option for Coping with the Distressed Physician

Thomas E. Bittker, M.D.

As many as one out of eight physicians are so compromised by alcoholism, drug abuse, depression, senility or medical illness to be unable to practice without jeopardizing the care of their patients. In part, because of the stigma of seeking help, many of these physicians go unnoticed until such time as their practice performance proves such an embarrassment that their colleagues or their patients insist on disciplinary intervention. Many of these patients produce malpractice problems; some practice well, episodically, but are so distressed that they end their lives in suicide. Warning signs are abundant; however, until the late 1960's many of us were reluctant to intervene. From 1968 to 1984, 49 state medical societies have organized impaired physician programs. Arizona was among the pioneers in establishing such a program. For several years we were receiving referrals on the average of one physician per month and had approximately 30 physicians under surveillance. In recent years, we have attempted to extend our network by collaborating with hospital administrators and chiefs of staff, other professions and with auxiliaries in speeding the time between distress and recognition of the problem. Our experiences indicate that many physicians endure great personal anguish long before their medical practice becomes compromised. These physicians need compassion rather than discipline. They need colleagues who are willing to intervene on their behalf, encourage referrals to treatment resources, and, when appropriate, assist in their rehabilitation. To wait until the problem becomes obvious overlooks excellent opportunities to prevent unnecessary tragedy and, in some cases, save lives.

Arizona's current medical practice act stipulates that any physician who has knowledge of behavior indicating impairment in a colleague *must* report this physician to the State Board of Medical Examiners. Included in this mandate are physicians who have a medical responsibility for another physician, psychiatrists, and physicians involved in such self-help groups as Alcoholics Anonymous. The law serves well in disciplining physicians who have stepped beyond the bounds of competence or propriety. Unfortunately, it overlooks the physician who is in distress and discourages colleagues who would otherwise want to intervene and refer the physician to an appropriate treatment resource. Under the current law, ignorance is safety: awareness becomes hazardous. Consequently, we turn our back on colleagues who need our help. Several other states have obligatory reporting laws for the impaired physician, but have worked out alternatives. In those states, the distressed, pre-impaired doctor may enter the state Medical Society's Physician Rehabilitation Program and remain immune from the Board of Medical Examiner's discipline as long as the physician maintains active involvement in treatment and refrains from any substandard medical practices. Similarly, these doctors are protected from public knowledge of their distressed state.

In California, a diversion program conceived in 1980 is currently seeing approximately eight new referrals per month and maintains approximately 200 physicians under surveillance.[1] The 1984 annual budget was $444 thousand, approximately $15 per physician registered, and $4,625 per physician referred to the program. A key ingredient of the California program is that all physicians cooperating with treatment recommendations remain out of awareness and outside the intervention of the disciplinary arm of the California Board of Medical Quality Assurance.

The program is staffed by professionals in Mental Health and substance abuse, and has available committees consisting of Physician Volunteers from the California Medical Society. A keystone of the program is a statewide network of regional diversion physicians in groups led by a lay facilitator and comprised of similarly distressed physicians.

Diversion evaluation committees supervise the individualized medical and professional rehabilitation program of each physician referred. On occasion outpatient professional consultation is purchased through the program's budget. The program offers an additional unnecessary embarrassment and cost associated with formal disciplinary procedures. The program manager, Jerome Becker, estimates that the $4,625 cost per case is less than one-half of what the cost would be should the physician require disciplinary intervention and surveillance. Finally, the program encourages self-referral, a feature which is relatively rare in more coercive alternatives. Whereas in its first year of operation most physicians were referred under pressure from colleagues, as of 1982, 75% of the physicians entered the program via self-referral.

From: P. O. Box 29030, Phoenix, Arizona 85038.

Given the cost effectiveness of rehabilitation versus training new physicians, this program warrants attention by the Arizona Legislators. It warrants physician support because it is right.

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American Medical Association

President's Inaugural Address

Joseph F. Boyle, M.D.

resented June 20, 1984, Chicago, Illinois

Joseph F. Boyle, M.D., a private practitioner of internal medicine and diseases of the chest from Los Angeles, California, became President of the American Medical Association at its Annual Meeting in June, 1984.

Elected to the AMA Board of Trustees in 1975, Doctor Boyle served as its Chairman from June 1981 to June 983. He has long been active in organized medicine at he local, state and national levels. He has served in many lected capacities, including President of the California Medical Association and the Los Angeles County Medial Association, Speaker of the California Medical Assoiation House of Delegates, and Delegate to the AMA House of Delegates.

Born in Jersey City, New Jersey, on November 21, 1924, Doctor Boyle received his M.D. degree from Temple University School of Medicine. His postgraduate work was done in both New Jersey and California. He is a Diplomate of the American Board of Internal Medicine.

In addition to being on the staff of several Los Angeles rea hospitals, Doctor Boyle has been Associate Clinical rofessor of Medicine at the University of Southern Caliornia School of Medicine since 1954, and Past President of the California Chapter of the American College of Chest Physicians.

Recent honors include receiving the Distinguished nternist of 1983 Award from the American Society of nternal Medicine, the 1984 Presidential Commendation rom the American Psychiatric Association, the title of Temple University Alumni Fellow, and the 1984 Temple University Alumni Association School of Medicine Certificate of Honor. Doctor Boyle serves as Chairman of the Steering Committee for the Health Policy Agenda for the American People.

Doctor Boyle's community activities have included the Los Angeles Area Chamber of Commerce; the California State Chamber of Commerce, where he recently completed a three-year term on its Board of Directors; the State of California Disaster Office; the California State Air Resources Board; President's Advisory Committee on Environmental Quality; and the California Citizens Committee on Tort Reform. He has served as President of the Board of Directors of the Tuberculosis and Health Association of Los Angeles County and is a member of the Board of Directors of the National Organization on Disability.

Doctor Boyle is the author of numerous papers on pulmonary and respiratory diseases.

My theme for you tonight is should we learn to say, "No." Every now and then on the Tonight Show, Johnny Carson plays a game called, "I have the answer. What is the question?" Ed McMahon feeds him an answer; Johnny quips the question.

Tonight, I have an answer for *you*. The answer is, "In a ten-year period of time, at least one million two hundred ten thousand people in the United States will have died. Over one million one hundred fifty thousand will have their lives shortened. Millions more will have been denied useful, productive and more comfortable lives because medical care had been denied them."

When Johnny does it, he is more irreverent than I will be when I say, "What is the question?" The question is, "What happened when American doctors learned to say 'no' to their patients?"

For over two thousand years, since the time of Hammurabi, doctors of medicine have dedicated themselves to a code of ethics, and although changing times and mores have produced a different set of words and phrases, the underlying bent of our commitment has been to help the sick, to do no harm, to educate the novice and to share medical knowledge with fellow physicians. The code of our medical bond is well summed up by two statements: The World Medical Association in 1948 said, "The health and welfare of patients shall be the first consideration, not allowing economics, politics, race or religion, or any other circumstance to take preference." A statement of the American Medical Association's Judicial Council says that while physicians should be conscious of cost, and not provide or prescribe unnecessary services, social policy expects that concern for the care of the patient will be the physician's first consideration.

Back to the question, the one about what happened when American doctors learned to say "no." The answer I gave you is not a fanciful one. It is culled from data contained in a report by Henry Aaron and William Schwartz writing for the Brookings Institution in a book entitled "The Painful Prescription." The report is a very thorough, careful and objective evaluation of the system of medical care in the United Kingdom as compared to that in the United States. Their data indicate quite clearly that were the standards for treatment now utilized in the United Kingdom applied to the people in the United States, there would be no fewer than 37,000 excess deaths a year from renal disease, 48,000 from cancer, 40,000 from coronary disease; 138,000 people would be denied the extension of a useful, productive and comfortable life. And that is just some of it.

Of critical importance to this country's physicians is the report's assessment of the attitudes of the United Kingdom's physicians. Doctors there gradually refine standards of care so that they can escape the constant recognition that financial limits compel them to do less than their best. They persuade themselves that patients lose nothing of medical significance when budget limitations force the provision of alternate forms of care, forms less than optimal. For the renal patient who dies, the victim of angina in pain, the person with the misdiagnosed head injuries, alternate treatments, albeit good for the budget, are not good for them. For the physician who prescribes the alternate treatment under the pressure of resource limits, those pressures allow the doctor to avoid the painful realization that he or she is doing less than the best for patients.

One consultant noted, "The physician has to look at the arguments for not treating a patient in order for the doctor to live with himself and to sleep well at night." In the United States, after twenty years of searching for means to assure access and availability of high quality medical care, and hospital services, to every person in the country, and after eight years of agonizing over how we can reduce the escalation in the cost of care, and promote economy and efficiency in the delivery of health care services, we have progressed to the question of how best to *limit* access, *decrease* demand and *ration* care. If you are pondering the appending of "we have progressed" to the question of reducing care, we can go on to the next query.

For the question before us now is how do we as a profession respond to the challenge of achieving true progress instead of the retrenchment just described. To me, it does not involve learning to say "no" to our patients, but instead requires a rededication to our professional ethics.

It does not involve berating ourselves, donning sackcloth and ashes, reciting hourly acts of contrition. Rather it does involve behaving like professionals in a profession that believes in itself, that believes in its future. It does not involve succumbing to the siren song of the business world, seeking means to enhance profits for personal wealth. No, it involves seeking the means to continue to provide good care for those who entrust their lives and well being to us.

For a few moments, explore with me some of the dimensions of this challenge. Remember we are the profession that helps the sick, does no harm, educates the novice and shares medical knowledge with fellow physicians. We are the people who believe that concern for the care of the patient will be the physician's firs consideration. Contrast these ethics with the advice tha we now receive from marketing experts, entrepreneur seeking membership in PPOs, economists, and, unfortunately, an increasing number of doctors of medicine Their advice says that in today's world the oath of Hippocrates, wherein it states that physicians have a primar responsibility to the individual patient, is irrelevant These counselors would have us believe that, instead we should adopt a business ethic.

Our professional ethic says that we are a collegia brother- and sisterhood in which our interests are mutually intertwined. A business ethic says, get your share drive the other fellow to the wall. Professional ethics say that we shall establish standards of what constitute moral and professional conduct; that we will care fo people, regardless of the circumstances, with compassion and concern.

The business ethic was well summed up for me by Uw Reinhardt, professor of economics at Princeton. Discussing the question, how does medicine and how d hospitals cope with a transformation into an industria complex, Dr. Reinhardt answered that, in Economics I he poses the question to his students, "What is a busines ethic?" His answer, "A business ethic is to maximize th return on investment to your shareholders withou breaking the law." And he noted that he further advise his students that when they are in business they shoul consider themselves in a race. In that situation, hundred-yard dash for example, it might be nice socia policy to pick up a candy wrapper on the track, but you' not be likely to win many races. And in business, you d not pick up social trash along the way. Not if you inten to win.

Roger Evans, in a special communication published *JAMA* in April 1983 entitled "Health Care Technolog and the Inevitability of Resource Allocation and Ration ing Decisions," made it very clear that there is an inher ent conflict between the rationing of medical care an resource allocation and the oath of Hippocrates. He say that if the individual responsible for the allocation o resources is the individual physician, then that physicia must, perforce, give up responsibility for the individua person. Further, Dr. Evans points out that recent repor indicate that competition can have a negative impact o the quality of care patients receive. He also notes tha when the public is exposed to decisions contrary to th interests of the person involved, decisions based on mix of both medical and social criteria differentiall valuing human life, the public will become increasing irritated and resentful.

Another example, perhaps closer to this House Delegates, the review of the Health Policy Agend showed that several principles clearly speak to the que tion of professional ethics. The report says primar responsibility for the establishment and implementatio of professional standards should rest with the healt are profession, and institutions and health care practioners should function according to codes of ethics that ake into account traditions of the profession, moral alues of society, and developments in science and medcine. Codes of ethics should be an addition to the equirements of the law and the dictates of personal onscience.

How do we resolve this principle with a possible ilemma to be faced by physicians when, because of RG reimbursement or other resource limits, they are ressed to either discharge patients from the hospital rematurely or not admit some patients to a hospital at l? Clearly, in the adherence to principles of our profeson, physicians should not accept a dictate that they will t other than in the best interest of the patients under eir care.

But there are other pressures that make it increasingly ifficult for us not to abandon the traditional ethics of ur profession. A major pressure, the Federal Trade ommission and the Anti-Trust Division of the United ates Department of Justice, have repeatedly asserted at they do not desire to interfere with a profession's eed to establish standards for competence of profesonal conduct designed to protect the public from audulent practices, abuse of license or hospital priviges and incompetent practices. But, in every instance, veats are added which preclude medical societies om imposing sanctions on members who practice blant quackery, habitually overcharge, practice beyond e scope of their clinical training, experience or cometence, or hold themselves out to provide diagnostic nd treatment modalities that have no scientific basis nd may even be patently dangerous and potentially thal—and all of this in the name of competition.

Some physicians rail mightily at organized medicine's pparent impotence in the conflict. Legislators and the edia often compound the issue by pursuing the theme at physicians think they are above the law and that edicine should be subject to the same rules as any usiness enterprise. Opportunistic trial attorneys seize oon carefully drawn criteria designed as guidelines for ppropriate care and use them against us in the courts uring malpractice trials.

The net of all this fuss and fury has produced a loss of ofessional self-esteem, a decrease in our adherence to hical standards, and a concomitant precipitous decline public confidence. And this in a time when the public ies out that it needs to believe in institutions and needs nfidence in those who minister to its needs. Is it any onder that there is a loss of public confidence in its stitutions?

I will suggest to you that we have an opportunity as a ofession to regain the public's confidence if we are illing to accept the task of leading—leading a restoraon of simple morality in society beginning with ourlves. We can accomplish this beginning with a dedication to a professional ethic.

Why do we tolerate physicians in practice who after ntracting to have their medical educations paid for at public expense then default on their loans or their commitments to public service, or cheat on entrance exams or examination for licensure?

Should we not insist that medical schools include a mandatory course in ethics in the curriculum when 70% of graduates tell us that their training has been less than adequate in helping them deal openly with their patients, identifying conflicts in medical ethical issues and providing awareness of social responsibility?

Why do we, by our silence, seem to condone the practice of some of our members engaged in scientific research who patently falsify their results to advance their own careers?

Have we addressed the question of the ethics involved when physicians engaged in basic scientific research, in the employ of industry, accept the proscription to keep their research secret—not to share the discovery—even though that may mean that a major advance in the diagnosis or treatment of disease may be denied the general public for years, if not forever?

Have we addressed the question of whether or not our teaching institutions ought to accept research grants from industry when restrictions on the use of that research come along with the grant?

Should we not loudly and clearly be encouraging our local medical associations to seek the means whereby they can review fee practices of some of their members, rather than withdrawing from the arena?

Are we willing to pledge substantial portions of our assets to stand behind those scientific societies that are willing to establish standards of practice that will protect the public from the incompetent practitioner?

It is my judgment that if we proceed in a deliberate and conscientious fashion, committing ourselves to an ethical standard for medical practice which is intended to serve our primary goal and protect the interest of individual patients; if we do not succumb to the notion that the individual doctor will become the agent to decrease access or availability or diminish quality in the cause of saving hospitals; if we state clearly that we will not surrender to attorneys or courts the practice of good medicine; if we pledge not to leave to the courts decisions best made by patients and their families and physicians; if we can begin with our own behavior and commitment to provide appropriate role models for medical students and physicians in training; if we seriously address the question of the conflicts between the needs of patients and the needs of corporate enterprise both in the provision of care and the process of research—then we will have taken a long step along the path which leads to real progress in medicine instead of a retreat into mediocrity.

The public has repeatedly told us through opinion polls that they do want someone to establish, monitor and maintain standards for its protection. Likewise public voices repeatedly tell us that the people to whom they look to provide that assurance for them belong to associations of medical doctors. We have a need to believe in ourselves because the public has a need to believe in us.

And in these times of rapidly expanding technology people have an increased need to be treated as individuals—to be personally touched. Can we not show them we care—slow down a little—and just as from time to time we say to those near and dear to us, "I love you," now and then pause and say to our patients, "Hey, I care!"

Each generation marches to its own music. I ask, will ours be a dirge or a processional; a drill or an orchestral; a disorganized cacophony or a blending of concern, love, understanding and caring? Will it be an ending or a beginning? I suggest to you that the choice is ours. I am not so naive as to believe that we can tonight declare the direction that American medicine will take over the next two, five or ten years. But I do suggest to you that tonight, if we the leadership of this country's physicians declare ourselves, then a direction will be ordained.

From experience, I know that tomorrow, and many tomorrows to come, will find me challenged by a host of interviewer microphones, an army of pencils poised over blank notepads and a galaxy of riveting and probing camera eyes and the people behind these tools of the media who will ask what I said to you tonight and what I meant by it. The most exultant position I could find myself in would be to be able to respond that I actually said nothing, but that you said to me that we have tonight resolved that we are a profession; that our lives are dedicated to the service of humankind; that we have examined ourselves and do declare that we remain committed to caring for people; that technology is a tool that we shall use wisely, but as its master, not as its slave.

Though the opportunity presents itself to enrich our purse, we shall opt instead to enrich our lives as we strive to enhance the lives of those we touch, those who entrust their beings to us. We stand prepared to care for all people simply because we care, and regardless of pressures we will remain advocates for our patients. The welfare of our patients is our agenda, come what may; our code of ethics is the bible by which we will live.

When I am quizzed tomorrow, can I deliver that message on your behalf?

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Editorials

Chiropractic Revisited

My previous editorial on chiropractic care in *Arizona Medicine*, April 1984 ssue, prompted several letters to the editor critical of the thoughts which it encompassed. These were published subsequently in *Arizona Medicine*, June 1984 ssue. In addition, my initial editorial was republished in a local chiropractic magazine and was criticized by a member of he chiropractic community. Rather than et this controversial topic slowly die, I hought I would continue to keep the fires burning by suggesting that as defenders of public health we need to bring chiropractic care into the twentieth century of scientific modern medicine. The public is to some extent at the mercy of such practitioners, especially if they are given fiat recognition by federal and state legislatures. We need to lobby the legislature nationally as well as locally to improve the quality of diagnosis and treatment administered by such practitioners. Large amounts of our gross national product are spent for medical therapy that has no basis in fact and has no beneficial effect.

If the federal government and the legislature are serious about decreasing the cost of health care, we need to look more critically at these situations. We need to take an active role in protecting the public from unscrupulous providers. We also have to recognize that the public sees a need for these practitioners because we are not fulfilling certain obligations as physicians. The most important that I believe is lacking is that of "caring." We attempt to cure, but many times forget to care. We need to humanize scientific medicine. I believe if we would, the public would not fall prey to practitioners who show caring but lack the scientific discipline to adequately diagnose and treat their illnesses.

Medicine is being buffeted by multiple forces at the present time, some economic and some philosophic. It is easy to say, "Don't bother me, let me just do my thing, whatever happens will happen, it's beyond my control!" But, it is that attitude which has put us in the situation that we now face. We need to fight back in an aggressive, organized, and knowledgeable way. Chiropractors are just one of a number of ancillary pseudoscientific groups who have found susceptible patients. We need to develop an approach which will enable us to deal not only with chiropractors, but with all practitioners who share thoughts on diagnosis and therapy which are not easily documented, i.e., homeopathy, naturopathy, etc.

It is not necessarily the initials after the name of the practitioner that should determine our response, but rather the quality of what is administered.

I again would like to propose that a subcommittee of ArMA in concert with those other interested authorities—BOMEX, the Legislature, and the State Department of Health be convened to deal with this problem. It has far-reaching implications, not only for us, but more importantly, for the welfare of the public.

Marshall B. Block, M.D.
Editor

Tracking Patients: Application of the COSTAR System

Just over a year ago an exciting era began at the University of Arizona Health Sciences Center. It began with the installation of COSTAR from the Laboratory of Computer Sciences at the Massachusetts General Hospital. COSTAR (COmputer STored Ambulatory Record) was created during the 1970s under a federal grant.[1] Its aim was to provide a paperless office system in the ambulatory care setting. It contains modules for billing, revenue analysis, scheduling, registration, report generation, and medical recordkeeping. It may be the only piece of software supported by a national, incorporated, nonprofit Users Group. The Users Group is based in San Marcos, California, at one of the larger COSTAR installations.

A year ago, the Health Sciences Center started a pilot project in order to gain some familiarity with this new tool. A community outreach clinic of the Department of Family and Community Medicine was chosen as a test site and a small group of patients' medical records was transferred to the computer. As new visits, new laboratory results, new x-ray findings, and other information occurred, all were entered into the computer. Data from those early patients are almost entirely computer recorded and the clinic continues to expand this process to the rest of its patient population.

What benefits have been seen? The benefits are mainly in the areas of record accessibility, readability, organization, and automated review. Because providers cross-cover for each other, it's important to be able to read the medical chart when seeing a patient in follow-up. Never before have records been so easy to review during actual patient care. A chart summary provides a complete problem list, current medications, allergies, past history, and flowcharts which are specific for the patients' problems. Charts have a consistent organization which eases the provider's reading task.

In the area of accessibility, providers can review charts at their desks and a wide variety of sites: home, the emergency room, potentially any place with a telephone. And, this improved accessibility comes about without the burdens of chart request and chart filing in the record room. Patients who are referred from the community clinic site to the hospital have their ambulatory chart summaries available in the hospital chart. This tends to centralize the chart and eliminate redundant test ordering, reducing health care costs.

Although in its infancy, automated chart review promises not only to improve the quality of the records by alerting clinic personnel to missing data items (such as lost laboratory test results), but through review, to improve patient care. A chart audit system can apply a provider's own standards of care to each chart and notify that provider when a chart does not reflect such standards. By such feedback, the providers can be more consistent in their delivery of a standard of care in which they believe.

Chart review assists the Family Practice Residency Training program. Accreditation and accepted teaching standards require periodic chart review for preselected conditions. COSTAR is able to provide a list of patients with chart summaries for any physician undergoing recertification, house officer in training, or student on clerkship rotation. Under manual systems this task is extremely difficult since finding charts for patients with a particular condition requires looking at the actual chart. Under COSTAR the computer searches for and prints out the appropriate information.

Of course, with the chart recorded in a computer readable form, a new tool emerges for clinical studies. The patient record can be searched in a way never before imagined. Studies are not limited by the time-consuming task of chart review, but rather limited only by our own abilities to describe a study design adequately. We can not only use this wealth of information for designed studies, but can cause the computer to search the data base looking for new relationships from which to derive new medical knowledge and plan additional studies to test unexpected hypotheses. The *RX* project did exactly this using the American Rheumatism Association Medical Information System (ARAMIS).[2] *RX's* authors believe that new medical knowledge can be derived from the observations recorded in the chart. As an interesting aside, the RX studies discovered what was described as "new" knowledge. In testing the hypotheses a literature search revealed that this knowledge had actually been reported years earlier. By linking on-line management systems with literature computer systems, duplicative research is avoidable.

COSTAR is an important milestone along our path toward better patient care. While only a first generation attempt to integrate the information handling ability of the computer with the physicians' daily tasks, it has already improved chart legibility, organization, and accessibility. It has opened the door to chart review not only for improving patient care, but improved education, cost savings and derivation of new medical knowledge.

Mark R. Dambro, M.D.
Head, Medical Computing Group

Louis J. Kettel, M.D.
Dean, College of Medicine

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Library Talk

Medical Libraries, Medicine, and the Humanities

Bertha R. Almagro

Availability of literature of the humanities and the nonmedical sciences should be an integral part of every medical school.

The humanities are vital and practical in modern medicine, since the works of Shakespeare, Mann, Proust, Cervantes, Tolstoy, Ibsen, Pirandello, Balzac, Joyce, Henry James, D. H. Lawrence, and many more, offer perceptive and profound insight into the motivations, relationships, and actions of humankind.

Reading the classical and outstanding works of history, literature and philosophy will help the would-be physician to perceive social and cultural nuances that will shed light on people and diseases.

The sciences and the humanities cohabited in the milieu of the medieval universities until they became estranged when undue emphasis on the sciences diverted the attention away from cultural literature. This chasm has begun to close as evidenced by the numerous books, articles, symposia, and programs aimed at reuniting them once again.

The library literature scarcely casts a glance in the direction of introducing literary works in the collection of health sciences libraries. In a biblioworld spellbound by computerization and networking, medical librarians can play a vital role in the healing process by the careful selection, acquisition, and promotion of works that will draw attention to the literature of the humanities, thus broadening the outlook and understanding of students, teachers, and practitioners.

Literature's unique ability to mirror and be mirrored by medicine has become apparent to medical educators, as evidenced by the flourishing of programs in classical literature and medicine. One such program is taught at the Dalhousie School of Medicine in Halifax, Canada, where a compulsory seminar effectively uses classical and contemporary prose and poetry to teach students how to make a diagnosis. An excellent example is provided by Henry James' masterpiece of skill and imagination "The Turn of the Screw." Upon reading this horror tale, the lector realizes that the heroine suffered from temporal lobe epilepsy. James' skillful use of this syndrome as the basis for this work, provides the reader with the opportunity to venture a diagnosis. There are conjectures about the possibility of James having shaped his character's behavior after reading Hughlings Jackson's paper on this condition. .

Another "Program in Medical Humanities" was recently launched by the University of Iowa College of Medicine. According to its director, the purpose is to "raise student and faculty consciousness about the topics encompassed under this name." Northeastern Ohio Universities College of Medicine in Rootstown, Ohio, was the sponsor of a poetry-writing competition open to medical students from all over the United States. There were poems about health, illness, and the experience of medical school; but love and personal tragedies were also represented. The 75 best poems have been captured between the covers of a small book entitled "Poetry: A Collection of Poems Written by Medical Students."

Introducing the humanities into the scientific curriculum will stimulate thinking, establish links with related knowledge, and strengthen the sense of belonging to the human race. According to data from the Association of American Medical Colleges, the number of majors from both sociobehavioral sciences and the humanities actually decreased between 1972 and 1980, thus placing an increased burden upon those responsible for educating and sensitizing medical students in these areas.

The significant role of the humanities has been overshadowed by the recent advances in medicine. It is of great importance that the humanities and other nonprofessional courses be recognized for their great contribution toward enriching the personal and professional lives of physicians. Lewis Thomas, in his essay "How to Fix the Premedical Curriculum" from "The Medusa and the Snail: More Notes of a Biology Watcher," points out that medical schools blindly insist on reinforcing the sciences at the expense of neglecting the liberal arts. He favors greater emphasis in this area, which he believes will ultimately benefit society.

Increased humanization of medical education can be achieved by exposing medical students, teachers, and practitioners to a well selected collection of literary works. A vast number of these works deal with a great wealth of human experience and the ambiguities of the human condition. Much of the material which the physician needs for profound understanding of a human being is present in great literature. The study of outstanding literary works can also contribute to the art of organizing and

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From: Assistant Librarian for Processing Services, University of Arizona Health Sciences Library, Tucson, Arizona 85724.

expressing clinical observations, thus enhancing effective communication with colleagues.

How the humanities can be integrated into the curriculum must be determined by a kind of think-tank group on literature and medicine. Medical librarians should be valuable contributors toward this achievement.

Correspondence

Editor:

With the five propositions regarding health care that are going to be on the ballot this November, we doctors may have to become political actives and advocates for our patients. All the propositions, the coalition's being the worst, are designed to save money by decreasing services. It is the coalition's claim that these services that we are now giving our patients, particularly hospitalization and testing, are not needed and that by stopping them there would be no decrease in patient care.

I suggest we ask our patients from now to November, did we do too much on this visit? Could we have avoided that last hospitalization? Are we doing too many tests on them? Do they feel that we are spending a lot of their money needlessly in our care of them?

Two things can happen if you ask these questions. One, we may find out that our patients believe we are doing too many tests and too much hospitalization and unnecessary surgery. If so, we, working with our patients would be able to cut the costs of care and give them care they feel they need. Or two, our patients may feel we are giving them the right amount of care. If so, we need to tell them that there will be less care available under the coalition proposition and encourage them to vote against Propostitions #109, 110, 200 and 302 and vote for Proposition 301.

R. O. Flynn, M.D.

Obituary

Robert Stanley Flinn, M.D.
1897—1984

In the death of Dr. Robert S. Flinn of Phoenix on July 22, 1984, like the death of his father, Dr. John W. Flinn in 1944, we lost one of the pioneer medical men in Arizona. Between the two of them, they represented more than a century of devoted and dedicated practice of medicine in this state.

Dr. Flinn was born July 19, 1897, in Wallace, province of Nova Scotia, Canada. He was one of five children born to Dr. John W. and Margaret Flinn. In 1898, the family moved to Kingman, Arizona because of a need for a change in climate. The elder Dr. Flinn had pulmonary tuberculosis. In 1902, following recovery from his illness, Dr. John Flinn moved his family to Prescott where he established "Pamsetgaaf Sanatorium." Having been impressed by his former Professor of Medicine at McGill University, Sir William Osler, he followed his dictum regarding tuberculosis, that one should have "pure air, maximum sunshine, equable temperature," and took the first letters of these words and added "good accommodations and food," creating the name "Pamsetgaaf."

Following graduation from Prescott High School, Dr. Flinn attended Harvard University and the Harvard Medical School receiving his M.D. degree in 1927. After a year at the Royal Victoria Hospital in Montreal for further training, he returned to Prescott in 1928 to become associated with his father. After two years he moved to Phoenix, and for a short time was associated with the late Dr. George Goodrich in the practice of Internal Medicine. It was at this time he developed a special interest in cardiology, and especially, electrocardiography. Over the years, he was closely associated with St. Joseph's Hospital where he served as President of the Medical Staff, Chairman of the Department of Cardiology and also, the Department of Electrocardiography.

Many honors came to Dr. Flinn over his years in practice. He was President of the Maricopa County Medical Society, the Arizona State Medical Association, and one of the founders and first presidents of the Arizona Heart Association. Dr. Flinn was also a Fellow of the American College of Physicians. He gave far more than he received, both through his own personal generosity with his interest in his profession, community and state, and through the Flinn Foundation of which he and his late wife, Irene, were the co-founders in 1965.

Just a very few examples of the benefactions of the Flinn Foundation are:

- Establishment of visiting professor programs in the Department of Internal Medicine at St. Joseph's Hospital and Medical Center and the Departments of Internal Medicine and Cardiology at the College of Medicine, University of Arizona. This brings nationally and internationally recognized physicians to both institutions for lectures and teaching.
- Funding of numerous medical research projects at the College of Medicine, University of Arizona.
- Establishment of the Flinn Foundation Career Development Fellowship Program in Internal Medicine at St. Joseph's Hospital and Medical Center.
- Endowment of the Robert S. and Irene P. Flinn Chair of Medicine at the College of Medicine, University of Arizona.
- Support of the Maricopa County Medical Society medical library—named in his honor, the Robert S. Flinn Medical Library.
- Generous support of the Department of Cardiodiagnostics at St. Joseph's Hospital. Included in this was the computerization of electrocardiograms; one of the first of such programs in a private hospital in the United States.

Dr. Flinn was a constant reader, keen observer, excellent writer and speaker; frequently being asked to speak before civic groups, graduates, health organizations and gave the address at the 25th Reunion of his graduating class at Harvard. I don't think they will ever recover. His speeches were always carefully prepared and very witty. His presentations of the "Pioneer Doctors of Arizona" at the 1964 and 1966 Annual Meeting and dinners of the Maricopa County Medical Society were classics.

One could not talk about Dr. Flinn without mentioning his love for travel, thoroughbred race horses, elegant tailor-made sport coats and his Rolls-Royce automobiles. His stable of horses raced at Turf Paradise in the winter and Hollywood Park and Del Mar in the summer. He was inducted into the Arizona Horse Racing Hall of Fame for his many contributions to Arizona horse racing, as an owner of outstanding race horses, and a Patron of the Sport.

This kind and genteel man will be sadly missed. He has enriched the lives of all those who have been associated with him. It has been a privilege for me to have been so closely associated with him, as a friend, as his physician, and serving as a founding trustee of the Flinn Foundation of which I am now president. It will be a challenge and a pleasure to carry on his philosophy of giving.

Dr. Flinn is survived by a son, John W. Flinn, and a granddaughter, Nancy Flinn, both of Phoenix, and also several nieces and nephews.

May God Bless You and Keep You, Sir Robert!

Donald K. Buffmire, M.D.

Howard S. Gray, M.D.
1935 - 1984

Howard S. Gray, M.D., prominent valley psychiatrist and Medical Director of Phoenix Camelback Hospital, died in a diving accident, July 11, 1984.

Dr. Gray was born in San Francisco, October 13, 1935. A graduate of the University of Southern California School of Medicine, Dr. Gray retained a position on the faculty as Instructor in Psychiatry. After completing his internship at Good Samaritan Hospital in Phoenix, and a residency at the Los Angeles County Hospital, he returned to Phoenix in 1967 where he has been active in numerous psychiatric associations. He was a member of the Arizona and American Medical Association, past president of the Phoenix Psychiatric Council in 1981, and served as Director of the Arizona Medical Association from 1980-1983.

Dr. Gray served two years of active duty in the United States Navy as Medical Officer, Lieutenant, Senior Grade, 1962-1964.

He is survived by his wife, Vita, and two daughters, Cindy and Erin. The family requests that donations be made to the Howard S. Gray Scholarship Fund, Occidental College: Attention, Dr. Richard Cooper, 1600 Campus Road, Los Angeles, California 90041.

A memorial service was held on Tuesday, July 24th at 2:00 p.m., in the Chapel at Paradise Valley Methodist Church, 4455 East Lincoln Drive, Paradise Valley, Arizona.

Jeri E. Ryan

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

GOVERNING COUNCIL HOSPITAL MEDICAL STAFF SECTION and ARIZONA HOSPITAL ASSOCIATION LIAISON COMMITTEE

A meeting of the Governing Council of the Hospital Medical Staff Section of the Arizona Medical Association, Inc., and the Arizona Hospital Association Liaison Committee was held on Saturday, August 18, 1984. Neil O. Ward, M.D., Chairman of the Governing Council, presiding.

The group discussed at great length the activities being carried on by ArMA, ArHA and the Arizonans to Protect Quality Health Service to defeat the Coalition's initiatives and to inform the public on the issue involved and the impact of each of the five health care propositions which would be carried on the November 6th ballot. It was noted that, while all three organizations were carrying out totally separate campaigns, i.e., the Arizona Medical Association actively supporting Proposition 301 and opposing the other four; the Arizona Hospital Association supporting Propositions 301 and 302; and the Arizonans to Protect supporting Propositions 109, 301 and 302, the uniformity of favoring No. 301 would undoubtedly have impact in the community. Reports were received on in-house educational ArHA COMM processes which had begun for employees and medical staffs, as well as establishment of voter registration within many hospital settings. It was agreed that the educational program recently initiated by ArMA would most likely carry great weight by virtue of the already established, very important physician-patient relationship.

The fall meeting of the ArMA Hospital Medical Staff Section scheduled for Saturday, September 15th, was discussed and the agenda reviewed. It was agreed that, in addition to scheduled presentations on CON, the November 6th health care propositions, an update on UB 82, and medical/dental staff relations, a time slot be given for some type of discussion on the Deficit Reduction Act of 1984. Because so little information is, as yet, available and the impact on physicians not totally determined, it was the consensus that this was a topic of extreme importance.

The recent activities of the oral surgeons and the state dental association relating to hospital staff privileges were discussed. A report was received on a meeting which was held and included representatives from this group in an attempt to define existing problems, develop a program which would be in the best interests of the patient, and initiate an ongoing educational process.

It was agreed that the next meeting would be held at 10:00 a.m. on Saturday, September 29, 1984, at the Arizona Medical Association offices.

BOARD OF DIRECTORS

A meeting of the Board of Directors of the Arizona Medical Association, Inc., was held on Saturday, July 28, 1984.

Mary Eleanor Holmes, President of the ArMA Auxiliary, reported to the Board on the ongoing Auxiliary activities, including AMA-ERF, their new brochure to promote membership in the Auxiliary, and "Project Med Vote."

Dr. Mangold advised that the ArMPAC Board met last week and designated almost $20,800 for legislative candidates in the primary election; there will be approximately another $25,000 available.

The AMA Delegation report on the 1984 Annual Meeting of the AMA was received by the Board and recommendations for nominations to AMA's Ad Hoc Committee on Young Physicians solicited. Dr. William Scott extended thanks for Board support during recent AMA elections.

Dr. Kettel commented briefly on various items of interest occurring at the College of Medicine, including the addition of a Philosophy/Ethics Professor to the staff of the College of Medicine and the activities regarding Kino and University

Hospitals. Dr. Kettel also advised that the legislation concerning cigarette tax monies for health research failed in the last Session, but indicated there may be similar legislation forthcoming.

Ron Krause reported on ArHA's activities on health care legislation, support of the legislative referenda with the exception of the one dealing with the constitution, hard lobbying efforts which managed to close the window on CON, and formation of Arizonans To Protect Quality Health Service.

Dr. Louis Kettel gave a brief report on the activities of Town Hall which presented a broad spectrum of health issues to many people but did not come up with a strong position.

A status report of resolutions considered by ArMA's House of Delegates during its April 1984 meeting was received and the Board reviewed and discussed Resolution 14-84 on the subject of Contracts. It was moved and carried that ArMA adopt as a benefit to its members a service providing analysis of Health Care Contracts as outlined in the letter from Snell and Wilmer and thank Snell and Wilmer for absorbing start-up cost of $2,000. Physicians who request the service will be charged for the same.

Resolution 16-84- Impact of All-Payor DRGs for Arizona Hospitals was discussed and it was decided that there should be a report made to the Board before the next Annual Meeting.

It was moved and carried to approve and ratify the minutes of the Executive Committee meetings held on April 27, June 7, and June 26, 1984.

Letter of appreciation from the Arizona Physicians Review Organization, dated 4/25/84 was received and Dr. Scott advised that *Names* will be the PRO for the state.

Much discussion was given the cost containment legislation and the consensus was that what would be most effective for patients' best quality health care was the most important aspect. It would offer us a chance to do something positive and bring "order out of chaos." It was moved and carried to actively support proposition 301 and actively oppose 109 and 302 and the Coalition's initiatives.

It was moved and carried to confirm the appointment of Paddy R. Garver, M.D., as a member of the Long Range Planning Committee.

It was moved and carried to confirm the appointments of Mary Eleanor Holmes and Diana Henderson as members of the Ad Hoc Membership Committee.

It was moved and carried to confirm the appointment of Michael V. Rock, M.D., as a member of the Professional Liability Committee.

It was moved and carried to confirm the appointment of Schuyler V. Hilts, M.D., as a member of the Publishing Committee.

Note from Mrs. Daniel Bright in appreciation of tribute to Dr. Bright was received.

It was moved and carried that we support the nomination of Harriet Babbitt, J.D., as a public member of the Liaison Committee on Medical Education (LCME).

EXECUTIVE COMMITTEE

A meeting of the Executive Committee of the Arizona Medical Association, Inc., was held on Friday, July 20, 1984, at the Association's offices.

The committee reviewed and discussed at great length all documentation relating to request for sponsorship of the Eleventh Annual Arizona Conference on Rural Health. Based upon several changes in the program, it reconsidered its February 17th position and took the following action: It was moved and carried to cosponsor the Eleventh Annual Arizona Conference on Rural Health to be held in Flagstaff, Arizona, August 2-4, 1984, by virtue of a contribution of up to $500.00 toward the participation in such conference by Richard Kirkpatrick but, additionally, to express the Association's concern that future programs deal more in-depth with issues of concern to rural physicians.

Following a presentation by Louis C. Kossuth, M.D., Chairman of the Ad Hoc Salt Reduction Committee, it was moved and carried to approve the program outlined by the Ad Hoc Salt Reduction Committee consisting of 40 various projects, it being understood that that committee would proceed within the allocated budget beginning with the three prioritized projects and with the understanding that the program be approached in a cautious manner as it relates to any statements which might be made in the name of the Association.

The committee reviewed the June 7th invitation to become a member of the National Council on Patient Information and Education (NCPIE) and it was moved and carried to follow the previous policy established by the Association and not accept the invitation to become a member organization in the National Council on Patient Information and Education.

Based upon the recommendation of the Ad Hoc Membership Committee it was moved and carried to accept the recommendation of the Ad Hoc Membership Committee and approve the establishment of a gold Mastercard Program for ArMA members.

At the request of the Ad Hoc Membership Committee and it being the consensus that promoting membership in the Association was an ongoing activity, it was moved and carried to approve the establishment of the Ad Hoc Membership Committee as a standing committee of the Association and to request that the Articles of Incorporation and Bylaws Committee prepare a resolution containing the appropriate bylaws change to accomplish this to be submitted to the 1985 Meeting of ArMA'S House of Delegates.

Various concerns regarding the Annual Meeting were discussed at great length, and it was moved and carried to discontinue the practice of inviting a representative from the American Association of Medical Assistants to address the first session of the Annual Meeting of the House of Delegates and to, alternatively, extend an invitation to make a like presentation to a meeting of the Board of Directors.

The recent adoption of the Budget Deficit Reduction Act of 1984 was discussed at great length and Edward Jacobson was requested to prepare a legal opinion relating to participating/nonparticipating physician and fee freeze.

The committee was apprised of the two openings which occurred on the Board of Medical Examiners as of July 1st and following a brief discussion, it was moved and carried to recommend to Governor Babbitt the reappointment of Steven S. Spencer, M.D. as a member of the State Board of Medical Examiners and, additionally, that John T. Clymer, M.D. be considered for appointment to such Board to fill the vacancy which will occur by reason of the expiration of the term of James E. Brady, Jr., M.D.

After reviewing several recommendations made by the Long Range Planning Committee during its meeting on July 14, 1984, it was moved and carried to correspond with the Presidents of the County Societies, informing them of the consideration being given to amending the existing Bylaws as they relate to formula for selection of members of the House of Delegates, outlining the reasons therefore as well as the changes which would occur by using a base of 40 instead of 20, and requesting their input and comments.

It was moved and carried to postpone any action on the 7/14/84 recommendation of the Long Range Planning Committee relating to activities of the Physician's Health Committee until Dr. Ward could meet with BOMEX to explore other available avenues and report back to the Executive Committee.

It was moved and carried to accept and approve the 7/14/84 recommendation of the Long Range Planning Committee regarding the activities of the Medical Education Committee and request the Medical Education Committee to intensify its liaison efforts with the University of Arizona, develop in-depth high quality voluntary continuing education programs by accreditation, and report on the cost effectiveness of the committee's activities.

It was moved and carried to refer the 7/14/84 action of the Long Range Planning Committee regarding investigation of a program on Public Awareness which would address such issues as the significance of the rationing of Health Care and develop methods of getting such information to the public to the Public Relations Committee for its immediate consideration.

Propositions for November Election: The Committee discussed ArMA's position on the propositions and the Coalition's initiatives to be included on the November ballot, as well as methods for educating members and the public, following which, it was moved and carried that the Arizona Medical Association actively oppose the coalition's two initiatives as well as propositions 109 (H.C.R. 2004) and 302 (S.C.R. 1001) and support proposition 301 (H.C.R. 2001), all of which will be presented to the voters during the November election.

The June 29, 1984 letter from Nathan D. Goldenthal, M.D., relating to processing of Medicare claims was reviewed and discussed, with the following action being taken. It was moved and carried that, in light of the issues outlined in recent correspondence from Nathan D. Goldenthal, M.D., as well as personal knowledge of committee members, the Association direct a letter to Medicare expressing concern regarding obvious delaying tactics in turnaround time on Medicare Claim Processing.

It was moved and carried to refer Dr. Goldenthal's correspondence to the Governmental Services Committee requesting that it investigate the issues of timely payment, etc. by Medicare and report back to the Executive Committee with its finding and recommendations.

Based upon some concerns about the Office Surgical Incentive Program set up by Blue Cross and Blue Shield of Arizona and the establishment of certain in-office surgical procedures it was determined to invite the chairman of Blue Cross and Blue Shield's Professional Committee and Dr. Linkner to the next Executive Committee meeting to discuss how determination was made as to procedures approved under their Office Surgical Incentive Program.

Future Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

SEPTEMBER

Clinical Seminar Series, What's New in the Surgical Specialties?
September 15, 1984, University of Arizona Health Sciences Center, Tucson, Arizona, Office of Continuing Medical Education and Outreach.

Hematology/Oncology
Series will be run September 4, October 2 and December 4, at St. Joseph's Hospital & Health Center, 350 North Wilmont Road, Tucson, Arizona, 85732. Contact: Yvonne Clingerman, (602) 296-3211—**Radiology Conference Series**—will be run September 11 & 15, and October 16 & 30.

The Beginnings of Cerebral Localization and Neurosurgery
Barrow Neurological Institute, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona, Conference room, first floor, provided by a faculty of members of the Barrow Neurological Institute Staff, open to interested individuals. September 18, 4:15-5:30. Contact: John R. Green, M.D., Director. Upcoming seminars on the History of the Neurosciences will be published in next issue.

OCTOBER

8th Annual Meeting American Society of Biomechanics
October 3-5, Plaza International Hotel, Tucson, Arizona. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach.

Neuroscience Satellite Symposia
October 8, 1984, Meaning and Methods of Muscle Architecture Studies — October 9, 1984, Organization of Movement, Arizona Health Sciences Center, Tucson, Arizona. Contact: Office of Continuing Medical Education and Outreach.

Neuro-Science Made Practical
October 11-13, Camelback Inn, Scottsdale, Arizona. Sponsored by Division of Neurology/Neurosurgery, Good Samaritan Medical Center, Phoenix, Arizona. Contact: Suzanne Bray, Coordinator, Neurological/Neurosurgical Enhancement, Good Samaritan Medical Center, (602) 239-5994. CEU's applied for and CME's approved.

Clinical Seminar Series
October 13, 1984, Immunology in Clinical Practice, Double Tree at Scottsdale Mall, Scottsdale, Arizona. Contact: University of Arizona, Office of Continuing Medical Education and Outreach

Neurology and Dermatology, the Annual Fall Pediatrics Conference
Sponsored by the Arizona Pediatrics Society. October 13-14, 1984 at the Doubletree Hotel, Tucson, Arizona. Approved for Category 1 credit hours. Featured speakers will include: John M. Freeman, M.D. of Johns Hopkins University, Gerald N. Goldberg, M.D., Peggy Ferry, M.D., Allan Kaplan, M.D., and James Rasmussen, M.D., University of Michigan. Contact: Lolly Dwan, Coordinator, CME — University of Arizona, College of Medicine, Tucson, Arizona, 85724. (602) 626-6173.

Cerebral Localization During the Past Century
October 23, Tuesday, 4:15-5:30 p.m., first floor conference room, Barrow Neurological Institute, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona. Contact: John R. Green, M.D., Director.

Western Society of Allergy and Immunology
October 25-27, Radisson Resort, Scottsdale, Arizona. Contact: University of Arizona, Office of Continuing Medical Education and Outreach.

Pathology Conference
Series will be presented on October 9, November 13, and December 11, at St. Joseph's Hospital & Health Center, 12:00 noon in the auditorium, 350 North Wilmont Road, Tucson, Arizona. Contact: Yvonne Clingerman, (602) 296-3211.

NOVEMBER

Fourth Annual Southwestern Poison Symposium
November 2-3, Scottsdale Hilton Hotel, Scottsdale, Arizona. Sponsored by Arizona Poison Control System, University of Arizona, College of Pharmacy, Tucson, Arizona and St. Luke's Hospital, Phoenix, Arizona. Credit Hours: 13, AMA, AAFP AzNA, ACEP, AOA. Contact: Office of Continuing Medical Education, U of A College of Medicine, Tucson, Arizona, 85724. (602) 626-6173

Arizona State Associate of Physician Assistance 1984 Fall Update
Geriatric Medicine, Psychiatry, Pharmacotherapeutics and Substance Abuse
November 2-4, Nautical Inn, Lake Havasu City, Arizona. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach.

1984 Regional Meetings, American College of Physicians
November 16-17, Sheraton Hotel, Scottsdale, Arizona. Contact: William F. Denny, M.D., FACP, VA Hospital, South Sixth Avenue, Tucson Arizona 85723.

Arizona Chapter of American College of Surgeons—The Abdomen—A General Surgeon's Overview.
November 16-17, Rancho de los Caballeros, Wickenburg. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach.

Clinical Seminar Series—Sexual Dysfunction and Impotence
November 17, Holiday Inn, Mesa/Chandler, Arizona. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach.

Diagnosis and Management of the Acute M.I.
November 9-11, Scottsdale, Arizona, Loews Paradise Valley. Contact: Beverly Jacobsen, Educational & Marketing Coordinator, International Medical Education Corporation, Englewood, Colorado, 800-525-8651. Course approved by the American Medical Association and the American Academy of Family Physicians. ECG and Acute M.I. course is approved by the American College of Emergency Physicians.

Parkinson's Disease Update
November 17, University of Arizona Student Union. Contact: Continuing Medical Sciences Center, Tucson, Arizona 85724, (602) 626-6173, Lynne Mascarella. Good for 8 hrs. Category 1 credit.

The Ventricular System, Cerebrospinal Fluid and Hydrocephalus
November 20, 4:15-5:30, Tuesday, Barrow Neurological Institute, first floor conference room, St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, Arizona. Contact John R. Green, M.D., Director. See upcoming dates for seminars on the History of the Neurosciences.

Fourth Assembly Meeting of the AMA-Hospital Medical Staff Section (AMA-HMSS)
November 29 through December 3, 1984, Hilton Hawaiian Village, Honolulu. Sponsored by Department of Hospital Medical Staff Services, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, 60610. Contact: Gary L. Fetgatter, Executive Assistant, Division of Professional Relations. (See full-page ad in this issue).

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

The XXXII Annual Convention of the Medical Society of the United States and Mexico will convene in Guadalajara, Jalisco, Mexico, November 14—17, 1984. For convention or membership information, call or write: **Mr. Kevin Walker,** Executive Secretary, Medical Society of the United States and Mexico, 810 West Bethany Home Road, Phoenix, Arizona 85013. (602) 246-8901.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008.
Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013.
Sponsor: St. Joseph's Hospital & Medical Center.
Contact: John R. Green, M.D.
Approved for 1 hour Category 1 credit.

The Beginnings of Cerebral Localization and Neurosurgery, September 18, Tuesday, 4:15-5:30 p.m., first floor conference room, John R. Green, M.D., Director

Cerebral Localization During the Past Century
October 23, Tuesday, 4:15-5:30 p.m., first floor conference room, John R. Green, Director

The Ventricular System, Cerebrospinal Fluid and Hydrocephalus
Tuesday, November 20, 4:15-5:30 p.m., firs floor conference room, Hal W. Pittman, M.D., Chief, Section of Pediatric Neurosurgery

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second anc fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, Ed.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept. & Nov.
Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.
Surgery of the Large Bowel
October 23, David Alberts, M.D. & Hugo Villar, M.D., University of Arizona Health Sciences Center. Approved for Category 1 credit hours. 12:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
The Emergency Treatment of Angina Pectoris
October 24, W. Scott Robertson, M.D., Scottsdale, Arizona. Approved for Category credit hours. 12:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
Surgery of the Biliary Tract
November 27, Charles Witte, M.D., Approved for Category 1 credit hours. 2:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
Dermatologic Manifestations of Systemic Disease
November 14, Stephan Billstein, M.D., Roche Laboratories.

CAMELBACK HOSPITAL

055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Robert Meyer, M.D. Approved for Category credit.
Clinical Conference
rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved or Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West nd.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet unch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande m.
ediatric Case Conference
nd Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

747 East Thomas Road, Phoenix, Arizona 5016. Contact: Medical Staff Secretary for dditional information.
hysicians Continuing Education Program
st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

400 N. Wilmot Road, Tucson, AZ 85712. ontact: Eric G. Ramsay, M.D. Approved r Category 1 credit.
amily Practice Department Meeting
st Monday, 12 Noon, (June, Sept. and ec.) Contact: R. Grossman, M.D.
urgical Department Meeting
d Monday, 11:45 p.m.
Medicine Department Meeting
1st Friday, 12:15 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.
Surgical Conference
Weekly, Monday 8:00 a.m., Contact: Eric G. Ramsey, M.D.
Medical Conference
Daily, 12:30 p.m., Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: James Byers, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008.
Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.
Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
1st & 3rd Monday, 12 Noon.
Medicine GI
2nd & 4th Monday, 12 Noon.
Medicine Dermatology
5th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m.
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.

Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon.
Contact: Neil Shernoff, M.D.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m.
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7:30 a.m.
Anesthesiology Journal Club
4th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
4th Thursday, 8:00 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12:30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251.
Contact: Tom Disney, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.
Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am. - 8:30 am., Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m
Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.

siting Professor Formal Presentation
eekly, Thursday, 8:00 a.m., PIMC.

siting Professor Informal Presentation
eekly, Thursday, 9:30 a.m.,
t Floor Conf. Room.

siting Professor Formal Presentation
eekly, Thursday, 12:30 p.m., PIMC.

ephrology Conference
eekly, Fridays, 12:30 p.m.,
diatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

0 N. Wilmot Road, Tucson, AZ 85711
ntact: Yvonne Clingerman, Medical Staff
fice. Approved for Category 1 credit.

rrent Concepts in Medicine
eekly, Tuesday, 12 Noon, Auditorium

Talk on Allergies
eekly, Tuesday, 12 Noon, Auditorium

rgery Department Conference
Monday, 12 Noon, Auditorium

matology/Oncology Conference
st Wednesday, 12 Noon, Contact:
ck Mansour, M.D.

hthalmology Case
d Tuesday, 7:30 a.m.

hthalmology Society
Tuesday, 6:00 p.m., Auditorium
ntact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

01 W. St. Mary's Road, Tucson, AZ
703. Contact: see below.

nthly Specialty Conference — Dept. of rgery
Monday, 7:30 a.m., Century Rm. A.,
ntact: Med. Staff Office.

nt Liver Conference - Lab Conference om
d Monday of each month - 12:00 noon.

and Rounds: Medical, Surgical, Family ctice, Pathology, Radiology
ekly, Thursday.

ergency Medicine Lectures
ekly, Thursday, 8:00 a.m.,
ntury Rm. A.

rdiology Conference
ekly, Friday, 8:00-9:00 a.m., Century
., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

01 E. Grant Road, Tucson, AZ 85716.
ntact: Eric G. Ramsay, M.D. Approved for
tegory 1 credit.

rdiology Conference
, 3rd, & 5th Mondays, 12 Noon,
ntact: M. Maximov, M.D.

rmatology Conference
Monday, 5:00 p.m.,
ntact: R. Miller, M.D.

docrinology Conference
Monday, 12 Noon,
ntact: M. Parker, M.D.

phrology Conference
d Monday, 12 Noon,
ntact: Stephen Seltzer.

ychiatry Department Meeting
Monday, 12 Noon,
ntact: Howard Winkler, M.D.

inatal Conference
d Tuesday, 7:00 a.m.

Surgical Conference
2nd Tuesday, 7:15 a.m.

Hematology Conference
4th Tuesday, 12 Noon,
Contact: Gerald Giordano, M.D.

Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon,
Contact: B. Friedman, M.D.

Orthopedic Conference
1st Tuesday, 7:30 p.m.,
Contact: Jay Katz, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesdays, 12:30 p.m.,
Contact: Dr. Lightner.

Neurophysiology Conference
2nd Tuesday, 5:00 p.m.,
Contact: Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m.,
Contact: Dr. Fuchs.

Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April,
July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: M. Fuchs, M.D.

Neuorology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon,
Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m.,
Contact: N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon,
Contact: Cancer Committee.

GI Conference
Weekly, Friday, 12 Noon,
Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m.,
Contact: S.V. Hilts, M.D.

OB/GYN Conference
1st Friday, 7:30 a.m.,
Contact: Charles Parker, M.D.

OB/GYN Pathology Conference
3rd Friday, 7:30 a.m.,
Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road,
Phoenix, AZ 85012. Contact: Alfred
Heilbrunn, M.D. Approved for Category 1
credit.

Urology Conferences
Weekly, Tuesdays, Room 2413 -
Uropathology
Weekly Tuesdays, Room D-335 —
Consultation
Weekly, Fridays, Room 3134 —
Uroradiology
These activities are a part of the CME
program at the Veterans Administration
Medical Center

Medical Service Grand Rounds
Weekly, Friday, 11:00 a.m. Rm. T-5,
Contact Dr. Zeller, Ext. 272

Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134
Contact: Dr. Kozarek, Ext 413
Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm. T5,
Contact: Dr. Byrne, Ext. 426.

Endocrine Conference
Weekly, Friday, 1:00 p.m., Rm. C435,
Contact Dr. Benene, Ext. 786

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134,
Contact: Dr. Russo, Ext. 362
and Dr. Mertz, Ext. 495.

Surgery — Pathology Conference
4th Monday, 4:00 p.m., Rm 3134,
Contact: Dr. Mertz & Dr. Lanard.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesdays, 12:00 noon, Rm.
C435, Contact: Dr. Sanowski, Ext. 321.

G.I. Grand Rounds
Weekly, Tuesday, 1:00 p.m., Rm. C435
Contact: Dr. Sanowski, Ext. 321

GI Pathology Conference
2nd and 4th Tuesdays, 12:00 noon,
Rm. 2413, Contact: Dr. Sanowski, Ext. 321

Renal Conference
Alternating Wednesdays, 1:00 p.m., Rm.
C435, Contact Dr. N. Sharma, Ext. 212

Urology Histopathology Conference
Weekly, Tuesdays, 8:00-9:00 a.m., Rm 2410,
Contact: Drs. Haddad & Kivirand, Ext. 417.

Pulmonary X-ray Correlation Conference
Weekly, Wednesdays, 12:30-1:30 p.m.,
Room 4115, Contact: Dr. Rohwedder,
Ext. 388.

Cardiology Conference
2nd & 4th Thursday, 1:00 p.m., Rm. C435,
Contact: Dr. C. Sharma, Ext. 435

Medical/Surgical Chest Conference
1st & 3rd Thursdays, 12:30 p.m., Rm. 4115
Contact: Dr. Rohwedder.

Medical Mortality Conference
1st Friday, 11:00 a.m., Room T-5,
Contact: Dr. Zeller, Ext. 272

Medical-Surgical G.I. Conference
1st & 3rd Monday, 3:00 p.m., Rm. 3134
Contact: Dr. Sanowski Ext. 321 & Dr. Mertz,
Ext. 495

Medical-Surgical Chest Conference
1st & 3rd Thursday, 1:00, Rm. C435,
Contact Dr. Rohwedder, Ext. 388

Neurology Conference
Alternating Wednesdays, 1:00 p.m., Rm.
C435, Contact: Dr. Lawrence, Ext. 410.

Neuro-Psychiatry Conference
4th Thursday, 2:30 p.m., Rm. 4115, Contact
Dr. Arnold, Ext. 647

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm. 3134, Contact:
Dr. Russo Ext. 362 & Dr. Mertz Ext. 495

Psychiatry Service Clinical Conference
3rd Wednesday, 8:30 a.m., Rm. D512,
Contact Dr. Arnold, Ext. 647.

Pulmonary Xray Correlation Conference
Weekly, Monday, 10:00 a.m., Rm C435,
Contact Dr. Rohwedder, Ext. 388.

Surgery-Pathology Conference
3rd Monday, 4:00 p.m., Rm. 2413, Contact
Dr. Mertz, Ext. 495 & Dr. Kerr, Ext. 511

Urology Conference
Weekly, Tuesday, 8:00 a.m., Room 3134,
Contact: Dr. Haddad, Ext 418.

Uropathology Conference
Weekly, Tuesday, 9:00 a.m., Rm. 2413
Contact: Drs. Haddad & Kivirand, Ext. 418

Uroradiology Conference
Weekly, Friday, 12:00, Rm. 3134, Contact
Dr. Haddad, Ext. 418

Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134,
Contact: Dr. Cintora, Ext. 417.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER
(U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m.,
Contact: Dr. Young.
Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC),
Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly, Wed., 4:00 p.m.,
Contact: Dr. Putnam.
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m.
Rm. N318, Contact: Department of Internal Medicine.
Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107,
Contact: J. Fitzharris, D.O.
Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.
Neurology Grand Rounds
Weekly, Friday, 12:00 p.m.,
Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER
(U of A, Tucson/ArMA)

2400 Avenue A., Yuma, Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.
Operation Outreach
2nd Tuesday, 6:30 p.m.
Pathology Conference
4th Tuesday, 7:00 a.m.
Operation Outreach
2nd Wednesday, 7:00 a.m.

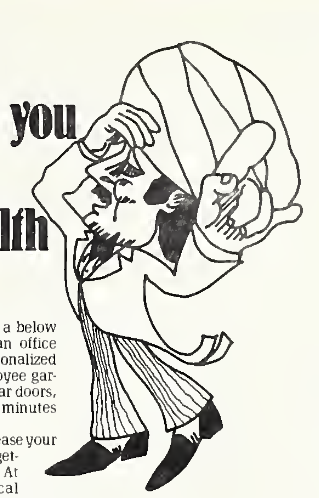
U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts:
Drs. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m.,
Room 5403.
Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.
Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.
Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.
Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m.,
Contact: Dr. Ewy.
Cardiology Non-invasive Conference
Weekly, Friday, 3:30 p.m.,
Contact: Dr. Ewy.
Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn,
Contact: Karen Garcia.
Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.
Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly,
Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.
Dermatology Conference
4th Monday, 5:15 p.m., AHSC,
Contact: Dr. R. Friedman.
Dermatology Rounds
Weekly, Wednesday, 11:30 a.m.,
Contact: Dr. Lynch.
Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m.,
Contact: Dr. S. Coulthard
Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m.,
Contact: Dr. Johnson.
Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC,
Contact: Dr. Sanders.
GI Pathology Conference
4th Friday, 1:30 p.m., AHSC,
Contact: S. Paplanus.
GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC,
Contact: Dr. T. Hunter.
Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m.,
Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m.,
Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.
Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m.,
AHSC, Contact: Dr. J. Smith.
Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC,
Contacts: Drs. Hughes & Alcorn.
Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m.,
Contact: Dr. Stern.
Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC,
Contact: Dr. P. Johnson.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m.,
Contact: Dr. P. C. Christenson.
Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m.,
Contact: Dr. Stern.
Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m.,
AHSC, Contact: Dr. C. Bamford.
Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.
OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC,
Contact: Dr. C. D. Christian.
Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC,
Contact: Dr. J. Herschler.
Ophthalmology Retina Fluoro. Conferenc
Weekly, Thursday, 5 p.m., AHSC,
Contact: Dr. H. Cross.
Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.
Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dinin
Rm. C&D, Contact: Drs. Hameroff & Cor
Pathology Conference
Weekly, Monday, 12 noon, AHSC,
Contact: Dr. C. D. Christian.
Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC,
Rm. 5120. Contact: Dr. P. Finley.
Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC,
Contact: Dr. A. R. Graham.
Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AH
Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: Dr. Lillian Valdes-Cruz.
Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m.,
Contact: Dr. Otakar Koldovsky.
Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact:
Dr. Marilyn Heines & Jane Ruggill.
Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC,
Rm. 8403, 5th Floor Auditorium.
Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact:
Dr. Alan Levenson, Palo Verde Hospital.
Pulmonary Rounds
Weekly, Friday, 11:30 a.m.,
Contact: Dr. Benjamin Burrows.
Chest Radiology
Weekly, Monday, 5:00-6:00 p.m.,
Rm. 1535F, UAHSC. Contact:
Irwin M. Freundlich, M.D.,
Department of Radiology.
Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC,
Contact: Dr. Christenson.
Radiation Oncology Planning Conferenc
Weekly, Friday, 8:30-10:00 a.m., AHSC,
Rm. 0655.
Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC,
Contact: Dr. Freundlich.
Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC,
Library Rm.1535C.
Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m.,
Contact: Dr. Nagle.
Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon
AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m.,
Diag. Radiology Conf. Rm.
Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC,
Contact: Dr. Wangensteen.
Surgical Morbidity & Mortality Conferen
Weekly, Wednesday, 8:00 a.m.,
Contact: Dr. Wangensteen.

uma Conference
ursday, 4:00-5:00 p.m. AHSC, Rm. 5505.
xicology Conference
ekly, Tuesday, 8:00 a.m.,
ntact: Dr. Keith Likes.
cson Ultrasonography Group
ekly, Wednesday, 4:30 p.m., AHSC,
ntact: Dr. I. Freundlich.
neral Urology Conference
ekly, Tuesday & Thursday, 12:00 noon,
SC & VA Hospital
ntact: Dr. G.W. Drach.
scular Surgery Conference
ekly, Tuesday, 4:00-6:00 p.m., AHSC,
ntact: Dr. J. Goldstone.



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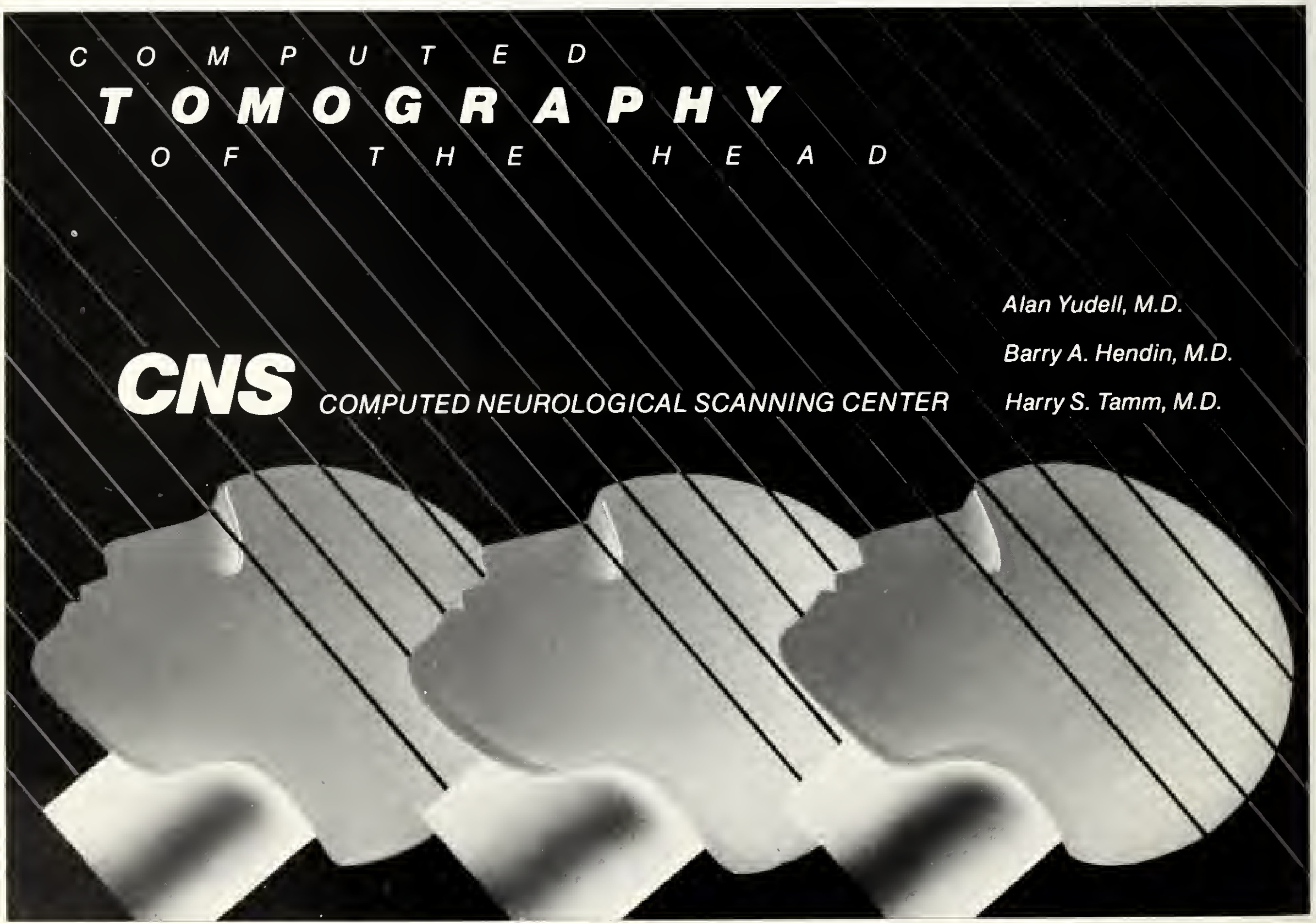

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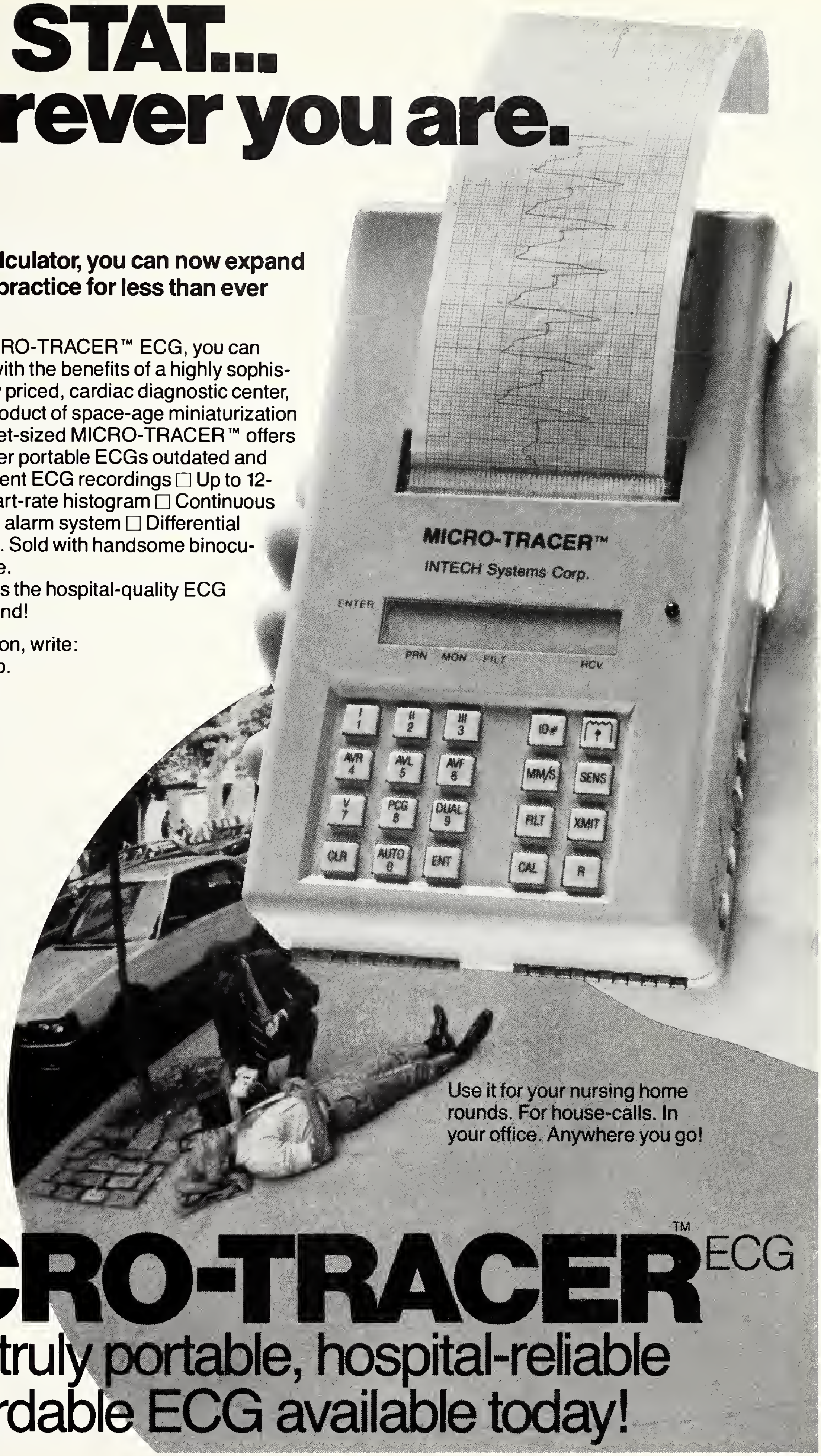

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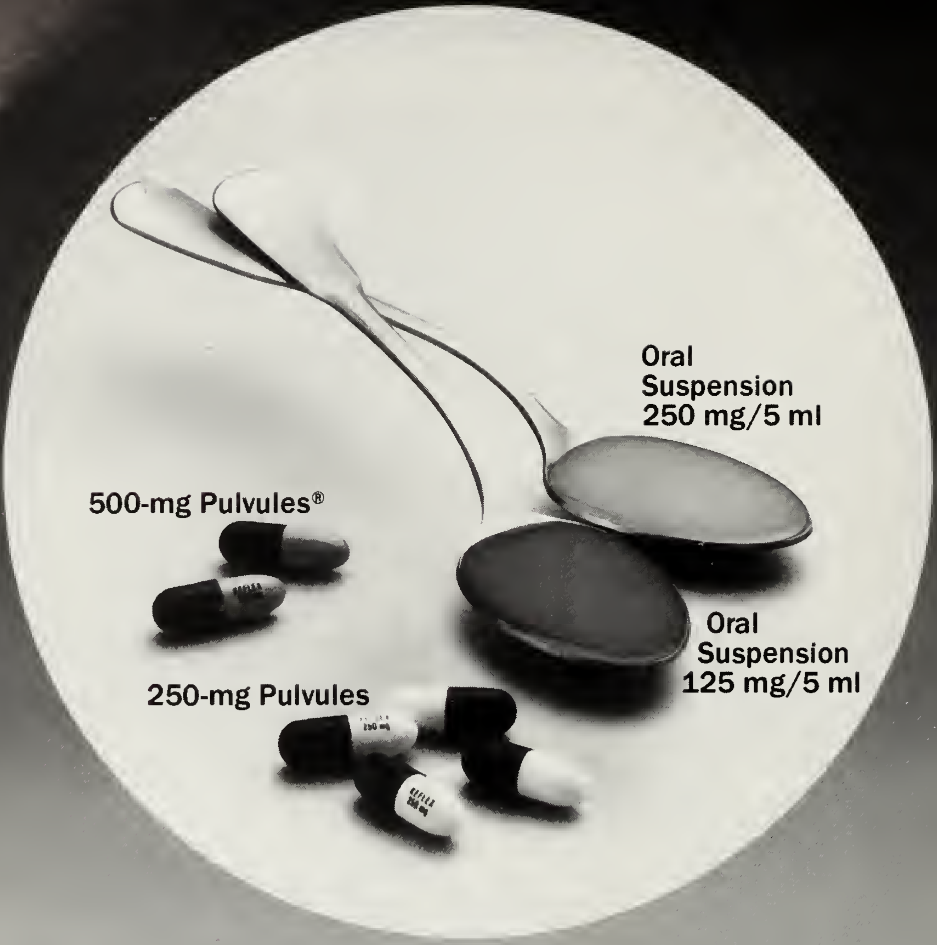

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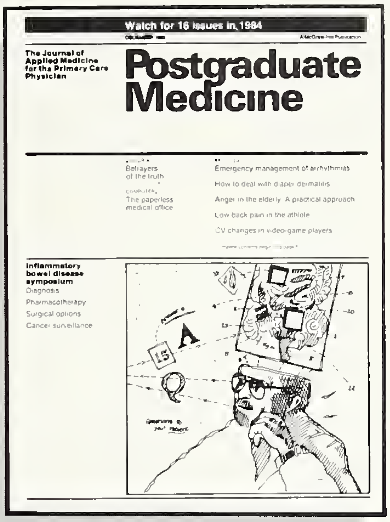

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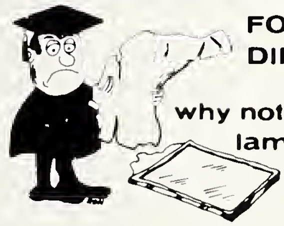

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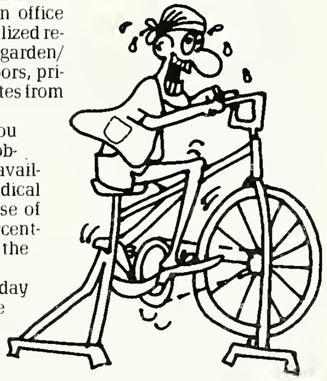

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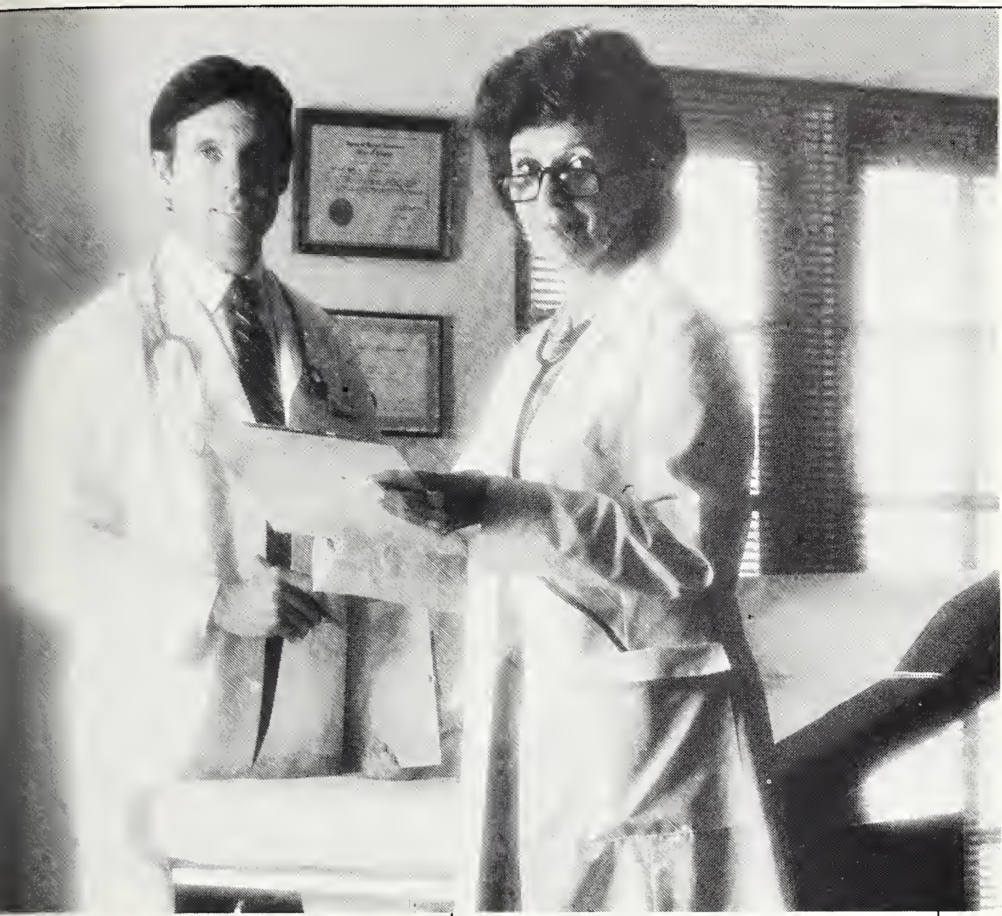

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dapted from Cassisi et al.[1]

REFERENCE:

Cassisi N, Cohn A, Davidson T, et al: Diffuse otitis externa: Clinical nd microbiologic findings in the course of a multicenter study on a ew otic solution. *Ann Otol Rhinol Laryngol* 86(suppl 39, pt 3):1-16, 977.

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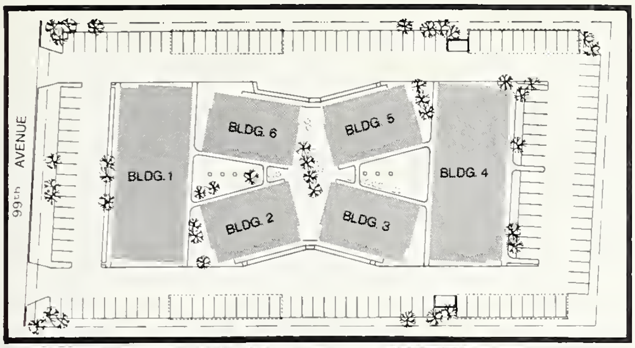

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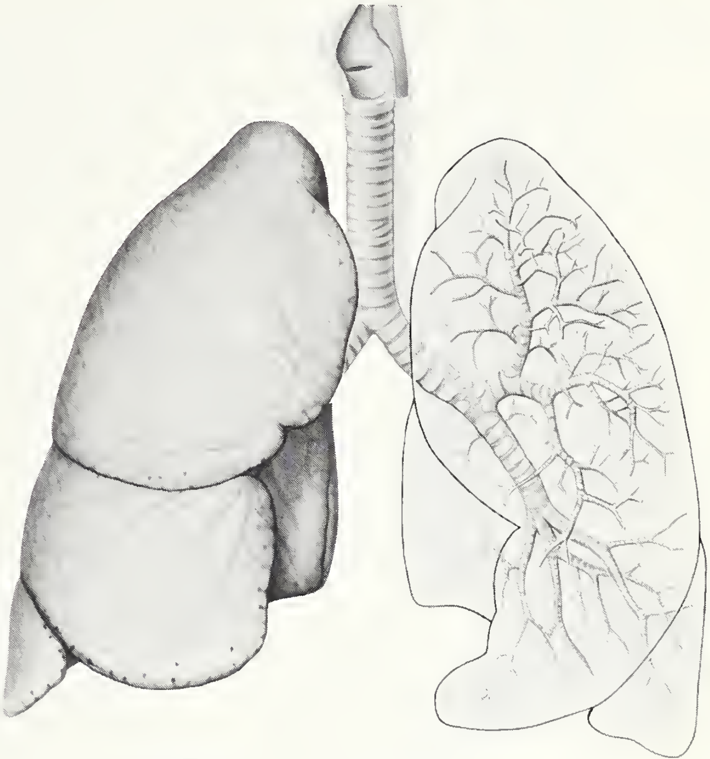

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Indications and Usage: Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae,* and *S pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C difficile* Other causes of colitis should be ruled out.

Precautions: *General Precautions* — If an allergic reaction to Ceclor* (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest* tablets but not with Tes-Tape* (Glucose Enzymatic Test Strip, USP, Lilly)

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy — Pregnancy Category B — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor* (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2 5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

Hepatic — Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

Note Ceclor* (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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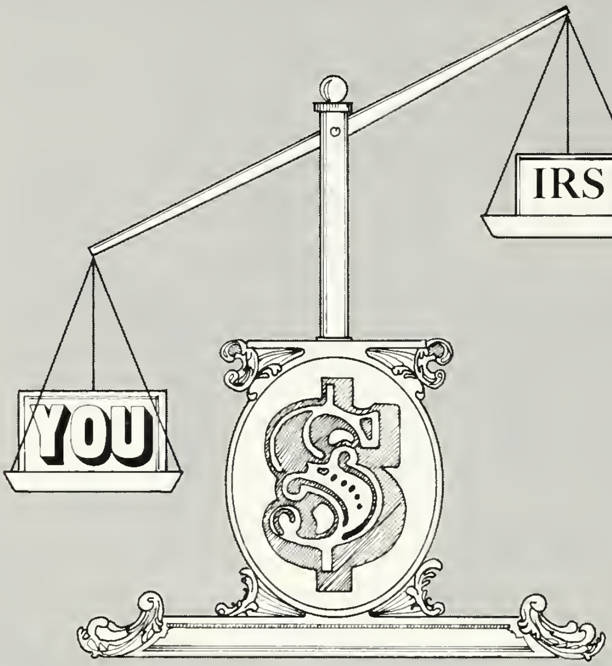

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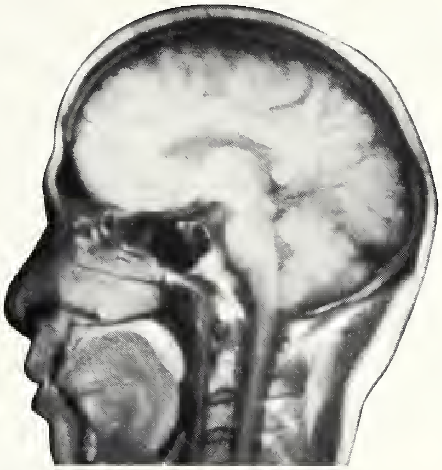

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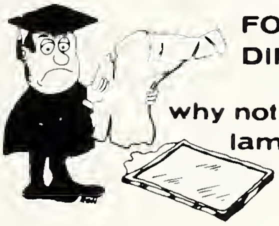

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AM Dermatology

Hansen's Disease in Arizona

Doug Campos-Outcalt, M.D.[1]
Ronald E. Pust, M.D.[1,2]

Editors:
Robert Allen Schwartz, M.D.
Ronald C. Hansen, M.D.

Abstract

With the recent influx of refugees from third world countries where Hansen's Disease is endemic, the incidence of leprosy in the U.S. is increasing. The number of cases reported, however, remains small and the risk to the general public is very low.

Physicians should entertain the possibility of Hansen's Disease whenever a patient, who has lived in a third world country, presents with chronic complaints referable to the skin, peripheral nerves or upper respiratory tract. A high index of suspicion, appropriate use of skin punch biopsy and a basic knowledge of Hansen's Disease clinical types, treatment regimens and resources for referral will lead to appropriate care.

Key words: Hansen's Disease (leprosy); Refugee Health; Tropical Disease.

Although still a relatively rare disease, Hansen's D ease (Leprosy) is becoming more prevalent in the Unit States. There were 357 new cases reported to t Hansen's Disease Center in Carville in 1983, 349 in 19 and 396 in 1981. This compares to 155 new cases in 19 95 in 1965 and 75 in 1955. The number of cases report from Arizona was 17 in 1983, three in 1982 and one 1981. In spite of these increases the risk of Hanse Disease in this country remains virtually confined recent arrivals from third world countries where the are an estimated 11 to 15 million cases.[1] There are or four foci in the U.S., New York, the Gulf Coast, Califo nia, and Hawaii, from which a few endemic cases a reported each year. The risk to the general pub remains very low and with early diagnosis and chem therapy Hansen's Disease is treatable, regressing wit out residua or deformities.

Diagnosis

With the recent influx of refugees from Southeast A and Latin America and their diffusion throughout t U.S., persons with undiagnosed Hansen's Disease m present themselves to unsuspecting physicians' offic The diagnosis of Hansen's Disease thus depends prim ily on a high index of suspicion in patients who ha lived in third world countries or who are their clo contacts or relatives.

Most of these patients will have chronic complai which have gone undiagnosed for an average of tv years.[2] Hansen's Disease should be considered in t differential diagnosis when non-acute symptoms a referable to the skin, peripheral nerves, upper respi tory tract, anterior third of the eyes, or to the test Because *Mycobacterium Leprae* grows best at cool temperatures, Hansen's Disease has a predilection f the skin and other organs near the body surface. addition to the cutaneous nerves, most of the maj nerves typically involved in Hansen's Disease (faci accessory, ulnar, peroneal, and posterior tibial) are su cutaneous at key points in their distribution, allowi thickening or tenderness to be easily palpated.[3-5]

Now universally accepted, the Ridley-Jopling clinic histological classification of Hansen's Disease reco nizes its two polar forms lepromatous (LL) a tuberculoid (TT)—and three intermediate or borderli graduations—BL, BB, and BT—along a spectrum dete mined by the individual's cell-mediated immunit Because of similarities in clinical features, diagnos methods, and treatment, these five forms of Hanse Disease are divided into multibacillary (LL, BL, BB) a paucibacillary types (BT, TT). In the U.S. most new cas and the majority of chronic cases under treatment a multibacillary.[2] This is also true of the spectrum seen most of Latin America and Asia. In Africa paucibacilla types have a higher incidence.

The prototype lepromatous (LL or BL) patient prese with multiple, diffuse, raised but poorly-marginated sk lesions, which may include nodules. The interior of t nose in untreated cases, the organ from which the d ease is transmitted, is commonly diffusely hyperem

---

From: Hansen's Disease Clinic, Maricopa County Department of Health Services, 1825 East Roosevelt, Phoenix, Arizona 85006,[1] and Department of Family and Community Medicine, University of Arizona College of Medicine, Tucson, Arizona 85724.[2] No reprints.

infiltrated with *M. Leprae*. The septum may show ding, collapse, or perforation. Peripheral nerve ons in this type appear late, as an incomplete king-glove sensation loss. Both the diagnosis and ntification of multibacillary leprosy by the bacillary x are quickly made by identifying acid-fast bacteria ite-stained slit skin smears. Acid-fast bacteria may be seen on nose blow secretions. These techniques, ever, are rarely available in the office setting.

uberculoid (BT, TT) leprosy typically presents with or a few well-defined anesthetic skin lesions, most n on the trunk, buttocks, or face. Due to rich inneron, the early stages of tuberculoid leprosy on the may not be completely anesthetic. Cutaneous or onal nerves are commonly enlarged or tender, often motor or sensory loss in their distribution. When e findings are present the diagnosis of paucibacillary osy is virtually assured even though smears rarely v bacilli.

practice, the nonleprologist should rely on the 4 skin punch biopsy to make the diagnosis of all types ansen's Disease. The biopsy should be deep enough nclude the dermis. The specimen should be submitin ten percent neutral formalin and labeled to indi- the possibility of Hansen's Disease since most ologists are not accustomed to seeing this disease.

determinate Hansen's Disease (not to be confused borderline) is a very early lesion which has not (and not) become evolved into one of the five histologitypes. It should be suspected in any immigrant ent who has a hypopigmented macule. In light ned patients, such macules may be erythematous. Indeterminate leprosy is confirmed by definite anesthesia in the macule or by the unlikely finding of perineural acid-fast bacilli in the biopsy. The usual histological picture, however, is only nonspecific, mild invasion of the dermis by round cells.[1,8] Since such macules are typical of several other diseases (especially fungal) that are common in the U.S., a practical approach is to biopsy all suspicious lesions, on recent arrivals from the third world, which are negative on Wood's light or on a ten percent KOH preparation of skin scrapings. When the histopathology is nonspecific, high risk patients should be seen every two to three months until the lesion regresses or evolves to a point at which a repeat biopsy can make the diagnosis.

Other confusing but less common presentations of Hansen's Disease include pure peripheral neuropathy without skin lesions.[9] These neuropathies may mimic diabetes, lead or other toxic neuropathies, syringomyelia and various heritable neuromuscular degenerative disorders. Other patients present with anterior eye involvement, typically keratitis or iritis.

Treatment

Since the resistance to dapsone, which has been used as monotherapy since the 1940's, has become a problem in the last ten years, the World Health Organization recommends the addition of monthly rifampin (and for multibacillary cases, daily clofazamine) to the basic regimen of daily dapsone.[10] Clinicians at the U.S. Public Health Services Hansen's Disease Center recommend, for the United States, the more expensive but definitely effective regimens shown in Table 1.

Table 1
A Comparison of the Clinical Aspects of Multibacillary and Paucibacillary Leprosy

Clinical Aspect	**Multibacillary**				**Paucibacillary**	
	Lepromatous		Borderline		Tuberculoid	
Ridley-Jopling type	LL	BL	BB		BT	TT
Immunity (CMI)	low		moderate			high
Infectiousness	moderate		slight			none
Diagnostic Confirmation	Biopsy (AFB in histocytes)					Biopsy (AFB rare)
-bacillary index	5-6+	4-5+	2-4+	0-2+		0-1+
Treatment, daily dose						
-Rifampin, 600 mg & Dapsone 100 mg			3 years			6 mos.
Followup phase Dapsone 100 mg			10 years to life			3 - 10 yrs.

Referrals

With the closing of all eight U.S. Public Health Service hospitals, clinical care of Hansen's Disease has shifted to area Hansen's Disease clinics, one of which is located at the Maricopa County Department of Health Services, Division of Public Health, in Phoenix (602) 258-6381. Medical care for Hansen's Disease patients is available at public expense at these facilities.

There are currently 32 patients with Hansen's Disease being cared for by the Phoenix Hansen's Disease Clinic. Twenty-one are male and eleven are female. The ages range from 18 to 72 years with a mean of 41 years. The breakdown, by Ridley-Jopling classification, for these patients is listed in Table 2 and their countries of origin in Table 3.

Table 2
Classification of Patients Followed at the Maricopa County Hansen's Disease Clinic

Classification	TT	BT	BB	BL	LL	I#
Number of Patients	5	4	2	3	12	6

# Indeterminate

Table 3
Country of Origin of Patients Followed at the Maricopa County Hansen's Disease Clinic

Country	Number of Patients
Mexico	10
Cambodia	8
Viet Nam	5
United States*	4
Unknown	4
China	1

*Some of these patients have spent time in the Third World countries.

In addition to providing care for patients with Hansen's Disease, the Phoenix clinic provides periodic screening exams to close contacts of Hansen's Disease patients as well as exams for any patient who is a Hansen's Disease suspect.

Summary

Any physician who examines recent arrivals from third world countries should keep in mind the possibility of Hansen's Disease, especially in those with non-acute symptoms of the skin, peripheral nerves and upper respiratory tract. For practical purposes, the diagnosis should be made using a skin punch biopsy. Treatment of the disease is available and when started early, prevents the progression to deformities. Treatment can be managed by the community physician in consultation with the regional Hansen's Disease Clinic or can be obtained, free of charge to the patient, at the Maricopa County Hansen's Disease Clinic.

Acknowledgements

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Industrial
Medicine

ysician's Obligation
File Reports

l A. Englander, Esq.

very physician attending or treating an injured ployee who may be entitled to receive compensation nefits under Arizona's Worker's Compensation Law st file a report with the Industrial Commission within ht days of the date the physician first renders treat- nt. This report, which must be on a form prescribed the Industrial Commission, should list every known ry sustained by the employee and thereafter be per- ally signed by the physician. Typewritten or stamped natures are not sufficient.

hould the disability extend beyond seven days, the sician must provide the insurance carrier with a nthly written report which describes the employee's dition, the nature of the treatment, the expected ation of the disability and prognosis. At the conclu- of treatment, the physician must forward a final ort to the insurance carrier. All of the physician's orts must be personally signed.

f the physician determines at the time of discharge t the employee has sustained an impairment of func- as a result of the industrial injury, the physician must ermine and rate the percentage of functional impair- nt in the manner discussed in the preceding article cerning scheduled and unscheduled disabilities. The is of the physician's rating should be supported by a ailed clinical report.

s discussed in the article concerning the reopening Worker's Compensation claims, a physician's report is ical to the successful reopening of an industrial claim.

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Medical
Genetics

Tay-Sachs Disease: Part 2

Model of a Fatal, Preventable, Metabolic, Genetic Disorder

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Abstract

A major aim of medical genetics is to prevent disease by removing the cause or by early detection of the disease. Tay-Sachs disease is a model of a preventable, fatal genetic disorder of children. Screening for Tay-Sachs disease carriers includes appropriate questions in the patient's history, followed by serum hexosaminidase-A (Hex-A) assays. Carrier diagnosis also involves white cell Hex-A testing in patients on oral contraceptives, in pregnancy or with diabetes. Genetic counseling, carrier testing and prenatal diagnosis for Tay-Sachs disease and other metabolic genetic diseases are available in Arizona and Nevada to prevent these fatal disorders.

Introduction

Among the physician's duties are not only to provide diagnosis but to prevent disease. This can be done in many situations today through antenatal and neonatal screening. England and the entire United Kingdom have pioneered in this endeavor, as summarized in a new book entitled *Antenatal and Neonatal Screening* edited by Nicholas J. Wald, Oxford University Press, 1984, Oxford, England. The organization of this book indicates its contents. (Table 1.)

From: The Genetic Center of Arizona Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281, The Genetics Center of Nevada Southwest Biomedical Research Institute, 901 Rancho Lane, Suite 104, Las Vegas, Nevada 89106, and Arizona Tay-Sachs Committee, Phoenix. Reprint requests to Frederick Hecht, M.D., The Genetic Center of Arizona Southwest Biomedical Research Center, 123 East University Drive, Tempe, Arizona 85281. This work is supported by grants to the Southwest Biomedical Research Institute from the Bureau of Community Health Services for the Arizona Genetics Program and the Nevada Genetics Program.

Table 1
Antenatal and Neonatal Screening for Disease*

- Principles of screening
- Disorders principally affecting the neonate
  - Open neural-tube defects
  - Down's syndrome and other chromosome disorders
  - X-linked disorders
  - Tay-Sachs and other fatal metabolic disorders
  - Genetic hematologic disorders
  - Cystic fibrosis
  - Phenylketonuric and other inherited metabolic disorders
  - Congenital hypothyroidism
  - The routine neonatal clinical examination
- Disorders principally affecting the mother and/or neonate
  - Acquired hematological disorders
  - Respiratory distress syndrome
  - Rh hemolytic disorder
  - Urinary tract and genital mycoplasm infections
  - Intrauterine infections: syphilis, viral, toxoplasma and chlamydia
  - Diabetes
  - Hypertension
- Disorders affecting the mother only
  - Cancer of the cervix

*Based on the Table of Contents of *Antenatal and Neonatal Screening* (N. Wald, ed., Oxford U. Press, 1984).

Tay-Sachs as a Model

Tay-Sachs disease is a potentially preventable disorder of lipid metabolism. It is a model of a lethal disease of genetic origin.

Biochemistry of Tay-Sachs Disease

Tay-Sachs disease is a storage disorder. It is due to an enzyme deficiency. The enzyme deficient in Tay-Sachs disease is normally packaged within a lysosome. Hence, Tay-Sachs disease is one of the lysosomal enzyme lesions detectable through an appropriate lysosomal screen. Deficiency of the enzyme impairs the normal degradation of a lipid. The lipid accumulates to levels that are abnormally high and is stored within cells damaging them.

1. The deficient enzyme: Hexosaminidase-A (Hex-A);
2. The excess lipid: ^{G}m2 ganglioside.

Genetics of Tay-Sachs

Tay-Sachs disease is an autosomal recessive disorder. The affected child is homozygous for a gene governing Hex-A. Each parent is heterozygous for this gene and is without symptoms. The chance is one-quarter (25%) for each of their children to have Tay-Sachs disease. Of their asymptomatic siblings, two of three will on the average be heterozygous carriers.

The reservoir for the Tay-Sachs gene in the population is relatively large. It is composed of heterozygous carriers. These carriers are normal individuals who have no suspicion of the lethal factor within their chromosome complement.

Rarely will there be a positive family history of Sachs disease. When there is such a history, the fami at elevated risk of a recurrence. Most cases of Tay-Sa disease will be confined to the current generatio children and will appear for the first time within family.

Gene Frequency: Tay-Sachs In Jews

There are three main groups of Jews in the wo Ashkenazi, Sephardic and Oriental. The Ashkenazi J are descendants of the Palestinian portion of Orie Jews. They migrated into Europe in the Middle Ages, to Germany and France and then to many other co tries including the Baltic nations as well as Poland Russia. Most American Jews are Ashkenazi.

The frequency of the Tay-Sachs gene in Ashken Jews is 0.037 in the United States; about one in 27 p sons. Therefore, one in about 730 marriages betw Ashkenazi Jews is at risk for a Tay-Sachs child.

In Non-Jews

The Tay-Sachs gene is not confined to Jews, bu present worldwide in other populations. The reser for the gene therefore extends through all known p ples of this earth.

Whether on a molecular level the Tay-Sachs gen identical in Jews and non-Jews is not yet clear. T information should become available soon throu gene cloning and DNA sequencing.

The exact frequency of the Tay-Sachs gene in n Jews is not known although it is certainly less comm among non-Jews. A rough estimate would be one-te the frequency in Jews; one in 270 persons.

From this we can calculate that among mixed m riages, one in 7,300 will be at risk for a Tay-Sachs ch The partners in this type of mixed marriage should screened for the Tay-Sachs gene.

The risk for Tay-Sachs disease is least in non-Jew marriages. Approximately, one in 73,000 will be at for a Tay-Sachs child.

Simple Screening Test for Tay-Sachs

Screening tests are usually considered in the narr sense as laboratory assays. However, one simple scre ing test is to ask two questions:

1. Are you, or any of your family, of Jewish origi
2. Is your mate, or any of their family, of Jew descent?

Ethnic origin is what matters. Religious practic irrelevant. No person will acquire the Tay-Sachs gene walking inside of a synagogue. Nor will anyone lose Tay-Sachs gene by conversion from Judaism to anot religion.

Jewish ancestry constitutes in itself an index of sus cion for the Tay-Sachs gene. All persons of Jewish c cent, or their mates, can be conveniently checked Tay-Sachs carrier status.

Other Ethnic Concentrations of Genetic Disease

Tay-Sachs disease is not alone among genetic disea with elevated frequencies in Jews. Other genetic eases concentrated in Jews are illustrated in Table 2

Table 2
Genetic Diseases Concentrated in Jews*

sease	Manifestations	Factor Responsible
axia- elangiectasia	Ataxia & dilated capillaries	Unknown
oom's syndrome	Dwarfism & sun sensitivity	Unknown
ctor IX eficiency	Bleeding & bruising	Factor IX
ucher disease, nfantile	Encephalopathy	Glucocerebrosidase
emann-Pick isease	Encephalopathy	Sphingomylenase
y-Sachs disease	Encephalopathy	Hex-A

partial list.

here is increasing emphasis today on Gaucher dis- e, since it is at least as common as Tay-Sachs disease in vs. Among the diseases concentrated in Ashkenazi vs, three are interestingly lipid storage diseases: ucher, Niemann-Pick and Tay-Sachs disease.

Many other genetic disorders show concentrations in ier ethnic groups. (Table 3.) Best known is sickle cell ease in Blacks. Thalassemia (Mediterranean anemia) ommon among Italian and Greek peoples. Phenylke- nuria (PKU) is concentrated among children with rthern European ancestry and in Yemenite Jews.

Table 3
Ethnic Concentrations of Genetic Diseases*

Disease	Concentrated in
Alpha-thalassemia	Chinese
Beta-thalassemia	Italians and Greeks
Congenital nephrosis	Finns
Familial Mediterranean fever	Armenians and others
Gallbladder disease & gallbladder cancer	American Indians
Phenylketonuria (PKU)	Northern European peoples
Sickle cell disease (Hb S)	Blacks
Tyrosinemia	French Canadians

partial list.

In Arizona, by law all newborns are screened for netic diseases. The screening tests involve six types of netic disorders:

1. PKU: an amino acid disorder.
2. Homocystinuria: a second amino acid disorder.
3. Maple syrup urine disease: another amino acid sorder.
4. Galactosemia: a carbohydrate disorder.
5. Hypothyroidism: a genetic (and/or environmental) sorder.
6. Hemoglobin disorders: including sickle cell disease.

Note that PKU and sickle cell disease, both of which show unusual ethnic concentrations, are among the newborn genetic screening tests.

Additional Disorders of Hexosaminidase (Hex)

The hexosaminidase enzyme system is complex. Hex-A consists of two alpha (α) chains plus two beta (β) chains. Another isomer, Hex-B, contains no α and four β chains.

Sandhoff disease, which is clinically similar to Tay-Sachs, is a β-chain lesion and so results in deficiency of Hex-A and Hex-B.

In addition to the two types of polypeptide chains, there is another gene; the activator gene for Hex. Lesions in it also result in disease.

A list of diseases due to disorders of hexosaminidase (Hex) is given in Table 4. Note that all known Hex diseases involve *encephalopathy* and/or *ataxia*. Note also that patients of all ages may have Hex disorders.

Table 4
Hexosaminase (Hex) Disorders*

Clinical Disorder	Types
Infantile encephalopathy	Tay-Sachs disease
Tay-Sachs compound	
Sandhoff disease	
Sandhoff compound	
Juvenile encephalopathy	Tay-Sachs disease
Tay-Sachs compound	
Sandhoff disease	
Adult encephalopathy	
Infantile ataxia	Atypical ataxia
Juvenile ataxia	Cerebellar ataxia
Adult ataxia	Pinocerebellar ataxia

*Based on Hecht and Cadien (1984).

Clinical Picture with Classic Tay-Sachs Disease

The clinical presentation of Tay-Sachs disease in infancy is the same in Jewish and non-Jewish children. The insidious onset is described in the preceding paper in which a case of Tay-Sachs disease is described in a young child not of Jewish ancestry.

Developmental delay within the first year of life is a cardinal finding. The child regresses gradually, but relentlessly to a state of total helplessness by age two to three years. Only supportive care including treatment for seizures is currently feasible.

Enzyme replacement supplying Hex A is attractive. Unfortunately, so far it is not useful.

Gene therapy supplying the defective gene, Hex A, may be the way to remedy this disease. Theoretically, the gene for Hex A could be spliced into the genome. It has not yet been done.

However, the disease is preventable by another approach: gene carrier detection, genetic counseling and prenatal diagnosis. Prenatal diagnosis is feasible by amniocentesis in mid-trimester and by chorionic villus biopsy in first trimester of pregnancy.

Serum Screening for Carriers

The common laboratory test for the detection of Tay-Sachs carriers is to determine Hex-A in serum. This is done by:

1. Determining the total Hex activity.
2. Denaturing Hex-A which is thermolabile relative to Hex-B.
3. Determining Hex-B activity; and
4. Subtracting Hex-B from total Hex activity to determine Hex-B activity.

Only laboratories that are specially skilled in Tay-Sachs carrier detection should be utilized. Those laboratories should belong to the national Tay-Sachs quality control program. (Mistakes by a laboratory in Tay-Sachs carrier detection are potentially subject to malpractice litigation, which may include the physician ordering the test as a defendant).

Interpretation of Serum Screening for Carriers

There are three possible outcomes with screening tests for Tay-Sachs carriers utilizing serum:

1. Non-carrier (clearly in the non-carrier range);
2. Carrier (clearly in the carrier range); or
3. Indeterminate (clearly in the intermediate zone where non-carriers and carriers overlap). Persons in the indeterminate range between clear carriers and clear non-carriers must be retested utilizing, for example, leukocytes.

Pitfalls dot the serum assay for Hex-A. Factors influencing the test include temperature, pH, buffer composition and total protein concentration. The statistical treatment of the data is also important.

The serum test to detect Tay-Sachs carriers cannot be utilized with reliability during *pregnancy* or when a woman is taking *oral contraceptives*. In such situations, one must test cells such as leukocytes for Hex-A. *Diabetes* may also alter Hex-A in serum and require assay of Hex-A in leukocytes.

Corroborative Tests for Tay-Sachs

Hex-A activity can be assayed in:

1. Leukocytes
2. Platelets
3. Chorionic villus samples (in first trimester)
    a) Uncultured chorionic villus sample (CVS) cells
    b) Cultured CVS cells
4. Amniotic fluid (in mid-trimester)
    a) Cell-free amniotic fluid
    b) Uncultured amniotic fluid cells; and
    c) Cultured amniotic fluid cells.

Our current preference for the sequence of assays is presented in Table 5. The leukocyte assay is not influenced by pregnancy or oral contraception or diabetes to a significant degree.

Table 5
Tay-Sachs Testing Sequence at the Genetics Centers in Arizona and Nevada

Step	Test Hex-A in
1	Serum
2	Leukocytes
3	Chorionic villus sample
4	Amniotic fluid cells

Testing for Tay-Sachs Carriers

Who? Any patient wishing to be screened for T Sachs carrier status can be conveniently checked Hex-A activity. Jewish persons or anyone of this desc is at elevated risk. Anyone who has a relative with t Tay-Sachs gene, irrespective of ethnic origin, is at hi risk.

When? The best time to test for Tay-Sachs diseas prior to having children. But better late than never. T detection of one Tay-Sachs carrier provides a lead int new family. Mass screening of newborns would be id in terms of uniform ascertainment, but has not yet be attempted.

We recommend especially that all obstetricians a family physicians doing obstetrics provide Tay-Sa screening for women in the reproductive age range

How? In Arizona, contact the Tay-Sachs Committ — Mrs. Phyllis Anatole, Coordinator, or Mrs. Su Szucs, Tay-Sachs Laboratory Supervisor, at the Genet Center in Tempe. Or, if outside of Arizona, contact y local Tay-Sachs program or genetics center.

Results of Tay-Sachs Screening

The serum Hex-A test is used, where appropriate, a is followed by the leukocyte (WBC) assay.

Table 6
Results of Screening 1,000 Persons of Ashkenazi Jewish Origin*

Class	Result	No.	%
Non-carriers	True negative	963	96.3%
	False positive	0	0.0%
	Total non-carriers	963	96.3%
Carrier	True positive	>36	>3.6
	False negative	< 1	<0.1
	Total carriers	37	3.7%
Total all persons		1,000	100.0

*Projection with serum and, where indicated, WBC He assays based on Hecht and Cadien (1984).

Projected results are shown in Table 6. These data are
sed on the sensitivity of the serum Hex-A assay
upled with the WBC Hex-A test, assuming the latter is
e hundred percent accurate in sensitivity and speci-
ity. Note that by the projection, no person will be
sely labelled as a carrier, but that there is a measurable
ance of missing a carrier. For this reason, it is recom-
ended that *both* prospective parents be tested. This
ll reduce the chance of missing a carrier to the product
the chances of missing two carriers: <1/1,000 x
/1000 = <1/1,000,000, less than one per million for this
ror of omission.

forming Patients of Tay-Sachs Laboratory Screening sults

It is essential to convey the results promptly, accu-
ely and honestly to everyone screened. A recom-
ended statement might be: "Your Tay-Sachs screening
t indicates, within the limits of the accuracy of the test,
at you are/are not a carrier."

This provides information and indicates that the tests
with all tests) have certain inherent limitations.

mmary

Tay-Sachs disease is of dual importance: first, as an
rinsically fatal disorder; and second, as a model of an
born error of metabolism. Screening is the key to
evention.

Reference

Hecht F, Cadien JM: Tay-Sachs disease and other fatal metabolic disorders. *In* Antenatal and Neonatal Screening (N.J. Wald, ed.) Oxford University Press, Oxford, 1984.

Nutrition

Severe Alcohol Abuse and Cellular Immune Functions

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David L. Earnest, M.D.

Medical complications related to the ingestion of large amounts of alcoholic beverages are being identified with increasing frequency. As part of the Navy's Substance Abuse Prevention Program, researchers at the University of Arizona Health Sciences Center (Drs. Hartmann, Watson, Eskelson, and Moriguchi) are trying to identify and relate sociological, biochemical, immunological and hormonal changes which characterize the alcohol abusers.

This review is a summation of the effects of alcohol on immune functions. Suppressed or altered immune functions associated with alcohol abuse are major complicating factors. The prevalence of various diseases in the alcoholic population have generally not been established. Rates seem to vary according to the subpopulation under study and the sensitivity of the techniques used to detect pathology. Because of the complexity of diagnosing alcohol abuse, few physicians are able to easily develop early working hypotheses that would articulate the role alcohol plays in the patient disease process. Using biochemical and immunological changes caused by high and prolonged consumption of ethanol may be more dependable as diagnostic indicators of alcoholism, alone or in conjunction with sociological data, than sociological parameters alone. In a recent detailed review, we summarized the changes in lymphocyte functions due to inordinate alcohol use or abuse in more detail.[1]

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Alcohol is a rapidly metabolized nutrient, a calorie substitute leading to other nutrient deficiencies, or a toxic drug, depending on the amount consumed and the duration of the exposure to the substance. This ambiguity creates many difficulties in the interpretation of the results of alcohol consumption, including its effects on host defense systems.[2]

It appears to be a useful assumption that the physiological and biochemical actions of ethanol on the tissues and cells of the organism can be separated into three quite distinct groups. One group includes the direct and indirect consequences of ethanol metabolism, which are seen at very low ethanol concentrations. Another group may be summarized as the pharmacological actions of alcohol, much less specific, and independent of the metabolism of ethanol itself. They become manifest only at high concentrations and are indeed similar to the actions of a large number of substances, chemically only remotely related to ethanol. Finally a third group is indirect, the result of offered food habits. Significant calorie substitution with attendant reductions in vitamin or mineral intakes can cause changes due to nutrient deficiencies.

Unfortunately, much of the research relating to cellular immune changes has been done with patients with alcoholic hepatitis.[1] Therefore conclusions from this research involving severe and prolonged dietary stress may be only indicative at best of changes which occur with lower consumption of alcohol or in the *absence* of liver damage. Alcoholic hepatitis is a severe form of ethanol-related liver injury characterized by the presence of hepatocellular necrosis, polymorphonuclear leukocyte infiltration, and alcoholic hyalin. Alcoholic hepatitis progresses to cirrhosis in 50% to 67% of cas
and is considered by many to be the intermediate step
the pathogenesis of alcoholic cirrhosis. Only 20%
chronic alcoholics develop alcoholic hepatitis and th
factors accounting for individual susceptibility a
unknown. We did not find a statistically significa
change in total T-lymphocytes.[3] However we did fi
significant changes in beta endorphin levels whic
increased with high alcohol consumption. We als
found significant changes in T-lymphocyte subsets wi
increased levels of T-helper cells and decreased
suppressor cells (Table 1).[3]

Patients with alcoholic liver disease have reduced ski
test reactivity to common antigens[4] and poor sensitiz
tion to dinitrochloro-benzene. Upon clinical recove
from alcoholic hepatitis, the percentage of positive ski
test increases.[4] These changes could occur, in patien
with severe liver injury, via undernutrition which is we
known to be immunosuppressive.[5] The relative contr
bution of such factors as protein or calorie malnutritio
to reduction in delayed hypersensitivity is difficult t
measure as improvement in hepatic function usual
parallels nutritional recovery.

Lymphocytes of patients with alcoholic cirrhosis hav
impaired mitogen response in normal serum while no
mal cells have reduced response in cirrhotic patie
serum. These reductions in mitogen responses hav
been attributed to both lymphocyte and circulating fac
tors.[6,7] Patients with alcoholic hepatitis also hav
reduced numbers of circulating lymphocytes. We foun
no significant effect of alcohol use on T-cell mito
genesis.[3]

In addition to absolute lymphopenia, alteration c
lymphocyte subpopulations has been described.

Table 1
T Lymphocyte Subsets in Lymphocytes Isolated From Blood of Non-Consumers and Consumers of Alcohol

Group[1]	T-Helper Lymphocytes (OKT-4)[2]	T-Suppressor Lymphocytes (OKT-8)	T-Helper T-Suppressor
Lifelong Abstainers (11)	40 ± 3.8	27 ± 2.7	1.7 ± 0.3
Previous Alcohol Abusers (11)	47 ± 2.0	28 ± 1.9	1.9 ± 0.2
Current Alcohol Abusers (11)	44 ± 3.8	25 ± 2.6	2.2 ± 0.5
Patients with Alcoholic Cirrhosis or Pancreatitis (10)	60 ± 3.6[3]	16 ± 3.1[3]	5.9 ± 1.6[3]

[1] Male subjects were classified in four groups. The number of subjects in each group are shown in parentheses.

[2] Mean ± standard error

[3] Significantly different from lifelong abstainers group (p 0.05)

duction in the number of circulating thymus-
pendent lymphocytes is seen in advanced alcoholic
er disease, especially alcoholic hepatitis, while the
mber of circulating bursa-dependent lymphocytes
mains unchanged. Some of this may be due to seques-
tion in the liver as well as changes in thymus hormone
oduction. *Nothing* is known about the effects of alco-
l on thymus hormone production. A strong indication
at high intakes of alcohol without liver damage cause
anges rapidly in cellular immune function was
ported by Sorrel and Leevy.[7] They showed that there
s increased lymphocyte mitogenesis upon addition of
hanol or acetaldehyde to cell cultures in vitro. Cells
m alcoholics with inactive cirrhosis did not produce
creased mitogenesis upon addition of ethanol. These
servations have been confirmed using leukocyte
gration.

The demonstration of lymphocyte-mediated hepato-
te injury would be important if cellular mechanisms
ay a role in the pathogenesis of alcoholic liver disease.
sentially all studies to date have evaluated spontane-
s cell-mediated cytotoxicity mediated by the natural
ler (NK) cell. NK cells are particularly important in
st defense against tumor cells. NK cells possess lytic
tential. They are capable of lysing a variety of target
lls including cancer cells when incubated together. *In*
ro peripheral blood lymphocytes of patients with
coholic hepatitis, but not inactive cirrhosis, are cyto-
xic for autologous hepatocytes isolated by collagenase
d ribonuclease treated percutaneous biopsies.[8] Fur-
ermore, preincubation of these lymphocytes with ace-
dehyde produced even greater cytotoxicity than that
served with unincubated lymphocytes. Other studies
owed greater lymphocyte cytotoxicity with alcoholic
rhosis and nonalcoholic hepatitis than controls.[1] NK
tivity *increases* consistently in alcoholic patients in
ite of factors such as smoking or undernutrition which
e known to be suppressive of NK activity.[9] This activity
crease of NK activity may be a blood indicator for
vere alcohol use or abuse. We are measuring NK cells
r correlation with changes in thymus functions and
muno-development. The increase in NK activity in
coholics[9] could be correlated with an increase in Null
lls or a decline in T-cells, but not B-cells. The number
B-cells as a percentage of peripheral blood lympho-
tes does not change much. Others have found in
cohol abusing patients a decrease in total lymphocytes
well as T-cells,[10] although we did not in a recent
udy.[3]

Recent animal studies with varying alcohol intakes in
inking water confirm these human studies.[11] NK activ-
was significantly higher after two weeks in animals
ven 2%, 4%, 8% or 16% alcohol in their drinking water.
ese changes apparently occurred prior to nutritional
ficiencies or liver damage, so presumably would be
e to direct interactions of alcohol or its metabolites on
llular immune systems. Subtoxic concentrations of
cohol added to cells *in vitro* inhibited NK activity.[11]
ese data suggest that long-term, high intakes of alcohol in humans and mice may alter the kinetics of production and turnover rates of lymphocytes in the thymus and/or spleen, with a resultant shift in relative concentrations of lymphocyte subpopulations. These changes may act as a marker for prolonged alcohol abuse or increased risk of disease via significant alterations in T-cell numbers and functions. Hence they need to be studied in humans in detail.

High levels of alcohol during a period of rapid growth, such as when the thymus gland is developing and affecting T-cell maturation, could be a time for damage or change. Four patients with clinical and laboratory features of the DiGeorge syndrome, including T-cell immunodeficiency, had a definite history of maternal alcoholism. Maternal alcoholism may result in the DiGeorge syndrome either as the single causative factor or in conjunction with other teratogens. This is supported by a report of fetal alcohol syndrome yielding increased life-threatening bacterial infections, decreased E-rosette forming cells, and decreased lymphocyte mitogenesis in vitro.[12]

Altered T-cell numbers, development and function, would be expected to result in changes in phagocytic cell functions via changes in released lymphokines. Normally, wounds in tissues which have a direct blood supply are infiltrated by PMN (polymorphonuclear leukocytes) within a few minutes after trauma. But in animals and man following ethanol administration, the accumulation of PMN at the site of induced infection or trauma is decreased.[13] It is generally agreed that granulocytes maintain normal chemotaxis, phagocytosis and intracellular killing of bacteria even in spite of a high concentration of alcohol in the blood. Therefore this may suggest inhibited production of chemotactic factors in persons abusing alcohol. The peripheral blood leucocyte numbers in ethanol treated animals or humans do not differ from that of the untreated controls. However, sublethal concentrations of alcohol significantly inhibit adherence of the granulocytes to the vascular endothelial surfaces. In a recent animal study,[14] a single dose of alcohol, the animal's first exposure, suppressed the number of PMN entering corneal lesions. Thus, alcohol, or its metabolites quickly inhibited leukocyte migration, without the possibility of long-term physiological changes accounting for the observation as might have been seen in severe prolonged alcoholism in man. In contrast in humans with advanced cirrhosis due to prolonged, excessive ingestion of ethanol, impaired phagocytic capacity and decreased metabolic activity was observed in the liver's reticuloendothelial system. In vitro, ethanol also impairs granulocyte chemotaxis, adherence, and phagocytosis. Inability of PMN to adhere to capillary walls might impair diapedesis through vessels to sites of injury, while impairment of phagocytosis and intracellular killing of bacteria may account in part for the reduced ability of the alcoholic to localize an infection.

Patients with alcoholic cirrhosis have impaired neutrophil chemotaxis even in the absence of serum ethanol or recent alcohol consumption.[1] Isolated alcoholic cirrhotic patient granulocytes migrate normally in control sera but not in sera from cirrhotics. Circulating inhibitors inactivate exogenous chemotactic stimuli such as bacterial chemotactic factor.[1] Chemotactic inhibitory activity may be a result of an IgA-like factor as removal of IgA from serum of cirrhotics by immunoabsorption results in loss of inhibition of chemotaxis. A potential modulating role of chemotactic inhibitory activity on cell-mediated immunity is indicated by the observation of improvement in delayed hypersensitivity after spontaneous loss of chemotactic inhibitory activity from serum in vivo. These observations suggest that suppression of granulocyte function by circulating factors could also predispose the patient with alcoholic cirrhosis to pyogenic infection while interference with delayed hypersensitivity could account for the increase of granulomatous disease such as tuberculosis.[1]

Altered PMN migration is significant as the reticuloendothelial system is a major host defense mechanism against bacterial and viral infections which are known to be common in alcoholics.[1,15] Impaired reticuloendothelial system function, leukopenia, reduced bactericidal activity, and decrease motility of granulocytes might be significant for the enhanced susceptibility to infections in such patients.[15] Experimental animal studies have shown that oral administration of alcohol will depress the phagocytic function of the fixed macrophages and that alcohol will impair the phagocytosis and intracellular killing of bacteria by the peritoneal macrophages. In addition the phagocytic function of fixed macrophages of the reticuloendothelial system may be depressed in acute alcoholic patients.

Clearly cirrhosis due to high, prolonged alcohol intake is immunosuppressive, which may account for increased infectious diseases and morbidity. It is less clear that more moderate intakes of alcohol profoundly affect as many immune systems. However changes do occur yielding alterations in lymphocyte sensitivity to alcohol *in vitro*, and cell development as shown by decreased NK cells.

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ɔre prescribing, see complete prescribing information in
ıF CO. literature or *PDR*. The following is a brief summary.

'ARNING
ıis drug is not indicated for initial therapy of edema or
ypertension Edema or hypertension requires therapy
rated to the individual. If this combination represents the
ɔsage so determined, its use may be more convenient in
atient management. Treatment of hypertension and edema
not static, but must be reevaluated as conditions in each
atient warrant.

ıtraindications: Concomitant use with other potassium-
ıing agents such as spironolactone or amiloride. Further use
ıuria, progressive renal or hepatic dysfunction, hyperkalemia.
existing elevated serum potassium. Hypersensitivity to either
ıponent or other sulfonamide-derived drugs.

nings: Do not use potassium supplements, dietary or other-
ɘ, unless hypokalemia develops or dietary intake of potas-
n is markedly impaired. If supplementary potassium is
ded, potassium tablets should not be used. Hyperkalemia
occur, and has been associated with cardiac irregularities. It
ıore likely in the severely ill, with urine volume less than one
'day, the elderly and diabetics with suspected or confirmed
al insufficiency. Periodically, serum K^+ levels should be deter-
ed. If hyperkalemia develops, substitute a thiazide alone,
ict K^+ intake. **Associated widened QRS complex or arrhyth-**
requires prompt additional therapy. Thiazides cross the
ental barrier and appear in cord blood. Use in pregnancy
ıires weighing anticipated benefits against possible hazards,
ıding fetal or neonatal jaundice, thrombocytopenia, other
ɜrse reactions seen in adults. Thiazides appear and tri-
erene may appear in breast milk. If their use is essential, the
ent should stop nursing. Adequate information on use in
dren is not available. Sensitivity reactions may occur in
ents with or without a history of allergy or bronchial asthma.
sible exacerbation or activation of systemic lupus erythe-
osus has been reported with thiazide diuretics.

ɔautions: Do periodic serum electrolyte determinations (par-
arly important in patients vomiting excessively or receiving
enteral fluids, and during concurrent use with amphotericin B
orticosteroids or corticotropin [ACTH]). Periodic BUN and
ım creatinine determinations should be made, especially in
elderly, diabetics or those with suspected or confirmed renal
fficiency. Cumulative effects of the drug may develop in
ents with impaired renal function. Thiazides should be used
caution in patients with impaired hepatic function. They can
cipitate coma in patients with severe liver disease. Observe
ılarly for possible blood dyscrasias, liver damage, other idio-
cratic reactions. Blood dyscrasias have been reported in
ents receiving triamterene, and leukopenia, thrombocyto-
ia, agranulocytosis, and aplastic and hemolytic anemia have
n reported with thiazides. Thiazides may cause manifestation
tent diabetes mellitus. The effects of oral anticoagulants may
lecreased when used concurrently with hydrochlorothiazide;
age adjustments may be necessary. Clinically insignificant
ıctions in arterial responsiveness to norepinephrine have
n reported. Thiazides have also been shown to increase the
ılyzing effect of nondepolarizing muscle relaxants such as
ocurarine. Triamterene is a weak folic acid antagonist. Do
odic blood studies in cirrhotics with splenomegaly. Anti-
ertensive effects may be enhanced in post-sympathectomy
ents. Use cautiously in surgical patients. Triamterene has
n found in renal stones in association with the other usual
ulus components. Therefore, 'Dyazide' should be used with
ion in patients with histories of stone formation. A few occur-
ces of acute renal failure have been reported in patients on
zide' when treated with indomethacin. Therefore, caution is
sed in administering nonsteroidal anti-inflammatory agents
'Dyazide'. The following may occur: transient elevated BUN
reatinine or both, hyperglycemia and glycosuria (diabetic
lin requirements may be altered), hyperuricemia and gout,
alis intoxication (in hypokalemia), decreasing alkali reserve
possible metabolic acidosis. 'Dyazide' interferes with fluores-
measurement of quinidine. Hypokalemia is uncommon with
zide', but should it develop, corrective measures should be
n such as potassium supplementation or increased dietary
e of potassium-rich foods. Corrective measures should be
uted cautiously and serum potassium levels determined.
ontinue corrective measures and 'Dyazide' should labora-
values reveal elevated serum potassium. Chloride deficit
occur as well as dilutional hyponatremia. Concurrent use
chlorpropamide may increase the risk of severe hypo-
emia. Serum PBI levels may decrease without signs of thyroid
ırbance. Calcium excretion is decreased by thiazides.
zide' should be withdrawn before conducting tests for para-
oid function.

zides may add to or potentiate the action of other antihyper-
ive drugs.

etics reduce renal clearance of lithium and increase the risk
ıium toxicity.

erse Reactions: Muscle cramps, weakness, dizziness, head-
e, dry mouth; anaphylaxis, rash, urticaria, photosensitivity,
ɔura, other dermatological conditions; nausea and vomiting,
rhea, constipation, other gastrointestinal disturbances; pos-
hypotension (may be aggravated by alcohol, barbiturates,
arcotics). Necrotizing vasculitis, paresthesias, icterus,
creatitis, xanthopsia and respiratory distress including pneu-
ıitis and pulmonary edema, transient blurred vision, sialade-
and vertigo have occurred with thiazides alone. Triamterene
been found in renal stones in association with other usual
ulus components. Rare incidents of acute interstitial nephritis
e been reported. Impotence has been reported in a few
ents on 'Dyazide', although a causal relationship has not
n established.

plied: 'Dyazide' is supplied in bottles of 1000 capsules;
gle Unit Packages (unit-dose) of 100 (intended for institu-
al use only); in Patient-Pak™ unit-of-use bottles of 100.

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Oncology/
Hematology

itamin E, A and C: ancer Prevention Agents?

onald Ross Watson, Ph.D.

ditors:
len Chase, B.S.
avid S. Alberts, M.D.

Components of some foods increase the risk of ancer. On the other hand very low intakes of certain utrients in food such as vitamin C and A are clearly ssociated with increased tumor incidence. Research nd public attention have been increasingly focused on ne forty nutrients required for life, testing the hypothe- s that high dietary intakes can help prevent cancer.[1]

As an example of the needed research, the University of Arizona is developing a major national center for cancer prevention research using nutritional supplements. In addition to my own research involving the effects of high intakes of vitamin A, selenium and E on immune functions, and the effects of exercise, use of multivitamins, and high vitamin C intake on cellular immune functions, several human trials are in process or in planning. Drs. Thomas Moon and Norman Levine are testing retinoids (vitamin A analogues) on preneoplastic conditions like Actinic Keratosis and the Nevis syndrome. Dr. Frank Meyskens, Jr. is directing a program project which includes a human trial using retinoids to prevent recurrence of basal cell carcinoma in the skin. Vitamin A and C, and 13-*cis* retinoic acid are being used to treat cervical displasia by Drs. Meyskens and Earl Surwit. Several additional human studies are being planned including the use of nutrients to prevent bladder cancer. The number of trials reflects both the potential usefulness of high vitamin therapy[2] and the need to demonstrate its benefit in humans, prior to general usage.

Many people are consuming high intakes of vitamins and/or minerals in foods and dietary supplements in the hope of preventing cancer. Epidemiological data suggest that the incidence of some cancers may have been reduced by dietary supplementation. However, is it the appropriate time to logically encourage widespread use of nutritional supplements or altered food habits to increase vitamin intakes for cancer prevention? What is a safe, economical way to increase vitamin consumption?

Cancer and Diet. A number of sources clearly indicates a relationship between diet and cancer incidence in human populations. The geographic distribution of tumors, the changing incidence in migrant populations, the distribution of tumors by socioeconomic groups, and data from experimental animal studies all point toward diet and nutrition as important factors in human cancer. Certain subgroups of the American population such as the Mormons (Church of Jesus Christ Latter-Day Saints)[3] and Seventh-Day Adventists, demonstrate differences in cancer rates that have been attributed in part to diet.[4] The dietary intake of white Seventh-Day Adventists consuming meat, a group known to have a remarkably diminished incidence of cancer, suggests a role for nutrition in cancer prevention.[4] They have a significant decrease in the intake of animal fat and carbohydrates and also a high consumption of vitamin A and C, compared to the general population of the United States.

In encouraging supplements or dietary changes, several issues need to be considered. These include balancing cost, toxicity, benefit of reduction of cancer, and effects the supplements may have on use of traditional cancer treatments and prevention techniques (such as smoking cessation). Are the increased costs of dietary supplementation or altered diets worth the decreased risk of cancer at this early stage of research? If so, for

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om: Department of Family and Community Medicine, Arizona ealth Sciences Center, Tucson, Arizona 85724. Reprint requests to onald Ross Watson, Ph.D., Department of Family and Community ledicine, Arizona Health Sciences Center, Tucson, Arizona 85724.

which nutrients and high risk groups of people should dietary changes be recommended?

Immunoalteration. One way to assess potential benefits is via changes in host defenses against cancer.[5] Deficiencies of vitamin A and C, suppress immune functions and reduced immunological activity correlates with increased incidence of cancer. Extremely little is known about the effects of high intakes of vitamin E[6] or C on human immune functions.[5] They presumably are not immunosuppressive, however more study is needed.

Recent studies show enhancement of humoral immune responses to sheep red blood cells and increased resistance to bacterial infections in animals given dietary supplements of vitamin E.[6] Others have also reported that vitamin E stimulates phagocytosis and mitogen responsiveness, while deficiency in vitamin E resulted in decreases in plaque forming cells and immunoglobulin production in mice.[7] Evidence to clearly show the role of dietary vitamin E on anticancer activities via altered host immune responses is limited. Antibody dependent cell-mediated cytotoxicity (ADCC) helps the host defenses against tumors, bacteria and viruses. We found that a prolonged, high vitamin E diet altered the mitogenic and antibody dependent cell-mediated cytotoxicity responses of spleen lymphocytes of immunological immature and mature mice.[7]

High vitamin A intake, for example, can increase T-lymphocyte mitogenesis and natural killer cell activities. However, some immunological activities are suppressed by very high vitamin A intakes.[8] Vitamin A has been shown to increase the mitogenic response to PHA in lymphocytes from animals and man. Retinoic acid stimulation of cell mediated immune reactions is indicated by the enhancement of skin graft rejection in mice and induction of cytotoxic T-cells in mice fed high retinoic acid intakes. However, stimulation of mitogenesis is not universal for all retinoids and at all concentrations.[8]

For example, retinol at high concentrations inhibited human T-cell mitogenesis. In mice, effector activity of spleen cells against a syngeneic tumor was specifically augmented by low doses of retinoic acid, whereas high doses had a suppressive effect. Cellular immune enhancement with increased tumor resistance by retinoids *in vivo* suggests that this property of retinoids may be system responsible for the retinoids' ability to inhibit the growth and development of certain types of tumors.[8] In one study, retinoid inhibition was only seen with tumors which are strongly immunogenic or in immunocompetent mice. Using adult thymectomized, lethally irradiated and fetal liver reconstituted mice, it was found that inhibition of tumor growth was not due to direct toxic effects of retinoic acid, but rather appeared to be the result of stimulation of thymus—dependent immune—mediated effectors able to suppress tumor growth.[8] Recently there has developed a wide interest in the immunological and antitumor actions of the natural precursor to retinol, beta-carotene. Beta-carotene enhances resistance to immunogenic tumors. The relative paucity of information of high doses of bet carotene on T-cell development and function makes critical to investigate its effects in normal volunteers ar then in cancer patients with multiple stresses c immune functions. Clearly nutrient intakes, both hig and very low, alter immune functions and may influenc cancer resistance.[5]

Vitamin A. Vitamin A (retinol) is required for deve opment, growth and differentiation of epitheli tissues.[2] In addition, it has anti-neoplastic and immun modulative properties. In some studies there is a inverse relationship between risk of cancer and retin plasma levels within the normal physiologic rang When vitamin A was fed to rats, tumor latency time w prolonged until the therapy was discontinued, at whic time the animals rapidly developed tumors.[2] Hypovit minosis A enhances the susceptibility of epitheli tissues to chemically induced carcinogenesis.

Epidemiologic evidence exists for the role of bet carotene and vitamin A in the reduction of cancer risk lung, head and neck, prostate, and breast cancer. Th data support further clinical research on the role vitamin A and related compounds to prevent epitheli cancers. It may be acceptable as an adjunct to conve tional therapies to use increased consumption vitamin A to help prevent recurrences of epitheli cancers. The epidemiological data could also be inte preted as showing that other compounds (no retinoids) help prevent tumors and are unidentified yet, but found in high levels in foods with high retino levels. A remarkable amount of laboratory evidenc indicates that vitamin A, its precursors, and derivativ can function as antipromotors and inhibit carcinogen sis whether initiated by chemical, viral, or physical (ultr violet) agents.[2] Retinoids can also clearly inhib malignant proliferation *in vitro* and *in vivo*.

Several groups have convincingly demonstrated th various proliferative skin diseases can be inhibited b vitamin A and synthetic retinoids. More recentl workers at the University of Arizona have reported th reversal of intracutaneous metastases of malignant me anoma in patients after the topical applications of al trans retinoic acid, and a twenty percent response rate skin and subcutaneous lesions of various squamous ce cancers (skin, head and neck, and lung) following th oral administration of 13-*cis* retinoic acid. They have als shown substantial partial responses of patients wit mycosis fungoides to oral 13-*cis* retinoic acid. Prolifera tive precursor lesions such as actinic keratoses, leuk plakia, bladder papillomas, epidermal dysplasi verruciformis, and keratocanthomas can be suppresse by retinoids. A detailed review has been recently pub lished of this area.[2]

The National Academy of Sciences has recommende that people eat food containing vitamin A on a dail basis to decrease their risk of disease. Moderate dietar changes which have limited increased costs, can als produce a higher retinoid intake. Increasing the intak of vitamin A from the RDA (Recommended Daily Allow ce) of 1000 ug (5000 I.U.) of retinol equivalent/day to high as 5000 ug by supplementation can be done atively cheaply and safely. This should be done with ution as higher levels have serious toxic side effects ch as central nervous system changes. A natural pre- sor of vitamin A, beta carotene has much less risk of y known side effects and may be a much better sup- ement. Vitamin A and/or beta carotene intake can be reased by consumption of green leafy and yellow getables, liver, and milk products. For example a large rot provides about 200% of the RDA and one cup of bage yields about 100% of the RDA of vitamin A.

itamin E. Vitamin E is present in a wide variety of ods, including vegetable oils, eggs, whole grains and ny cereals. A major physiologic role of vitamin E is its ility to function as an antioxidant and free radical venger. It is especially active in inhibiting lipid perox- tion. The blocking effect of nitrosation by vitamin E nfirms its potential role as a protective agent in the vironment. There appears to be good evidence for a otective effect for vitamin E in the carcinogen induced nor systems in experimental animals.

The functional form of vitamin E is alpha-tocopherol. concentration in foods is usually proportional to the ount of linoleic acid present, which is particularly gh in safflower oil. A *minimum* daily requirement is imated to be about 10 mg of alpha-tocopherol, an ount that is likely to be present in almost every type of t consumed by human populations.

Vitamin E is nontoxic in even much higher doses. For ample, ingestion of 300 mg of alpha tocopherol daily three years caused no ill effects in humans.[4] Such a gh dose is not generally possible by food consumption one and supplementation is required. In humans the st and the risk of toxicity of high doses of vitamin E 0-600 mg/day) are extremely low, so potential bene- s in preventing cancer from oxidants are readily avail- le. Thus prevention of nitrosamine induced cancers th vitamin E appears to be a rational approach.

The use of vitamins to assist conventional therapy to event spread of neoplasias still has to be viewed as very perimental and needs further study. Even though the cessary human trials to show efficacy have not been ne, the animal data suggest that some vitamins will ove useful adjuncts to current cancer therapy. Thus it ems reasonable to consider use of some nutritional erapies as adjuncts to the usual conventional cancer erapy, as long as the conventional therapy is con- ued.

Vitamin C. Ascorbic acid, like vitamin E, is a nitrite avenger in diets, preventing the nitrosation of amines nich are carcinogenic to animals, and presumably to mans.[4] One interesting aspect of the relationship tween ascorbic acid and cancer is the probable effect ascorbic acid on stomach cancer induced by salt red meats, and smoked foods.[4] These cured foods are ten associated with the formation of nitrosamines. onsumption of these foods by populations that have a gh incidence of stomach cancer suggests that conditions which promote the formation of nitrosamines increase the risk of cancer of the stomach. While this has not been established in human populations, it is clearly the case in experimental animal studies.[4]

Ingestion of vitamin C containing foods appears to lower the risk of several types of tumors.[4] Based upon both the animal and human studies, recommendations designed to substantially increase consumption of vitamin C containing foods seem reasonable and safe.[4] To reach levels many times above the RDA (60 mg/day) may require supplementation. An orange, which is a very rich source of vitamin C, provides about 100% of the RDA. Adverse effects appear in some people using extremely high vitamin C intakes (2,000-10,000 mg/day). They include fatigue, acidosis, oxaluria, diarrhea, and renal stones.

In summary, increased intakes of vitamin A, E, and C and/or foods containing them in high levels may have benefits for people with a high risk of certain types of cancer. The risks of toxicity of moderately high intakes (two to five times the RDA) are very low. More research is needed prior to encouraging the general population to use higher intakes of these compounds. The potential appears great that high intakes of various nutrients can reduce the incidence of some types of cancer.[2,4,5]

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Answer on page 67

Radiology

Case of the Month No. 74

David Kush
Jonathan M. Levy, M.D.
Cary J. Stegman, M.D.

Editor:
Jonathan M. Levy, M.D.

A three-year-old girl was brought in by her parents. She had a worsening cough for two days, but no sign of pulmonary pathology on physical exam. Her tonsils were inflamed, and grossly enlarged. A lateral film of the nasopharynx was obtained. (Figure 1).

Is there an objective way of determining if significant nasopharyngeal obstruction is present?

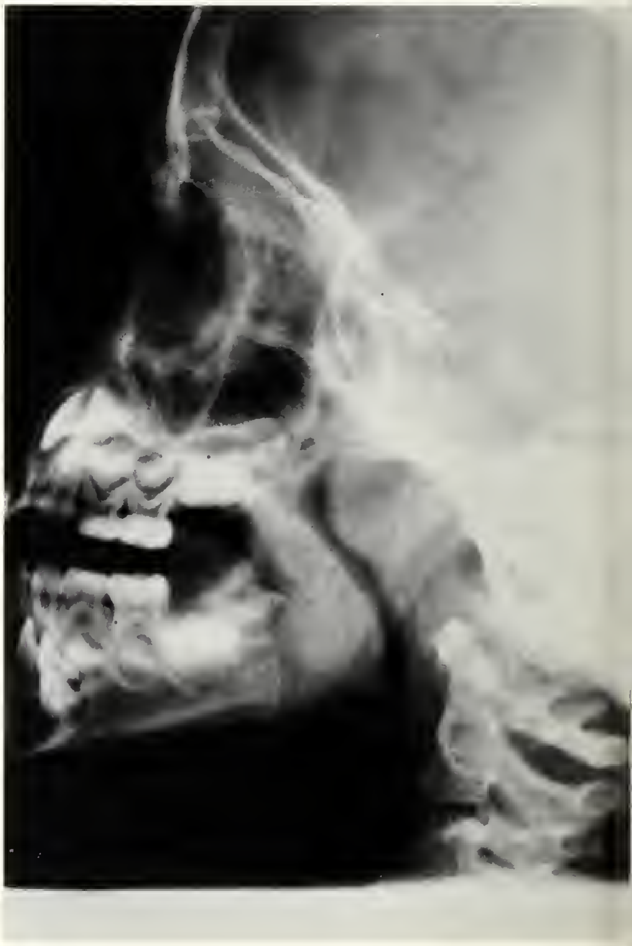

Figure 1
Lateral view of nasopharynx

From: The University of Arizona School of Medicine, (DK), and the Department of Radiology, (JML, CJS), Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251.

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Chronic studies in rats and monkeys have shown mild renal toxicity with papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with *Motrin* Tablets

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue *Motrin* Tablets and the patient should have an ophthalmologic examination, including central visual fields and color vision testing

Fluid retention and edema have been associated with *Motrin* Tablets; use with caution in patients with a history of cardiac decompensation or hypertension. In patients with renal impairment, reduced dosage may be necessary Prospective studies of *Motrin* Tablets safety in patients with chronic renal failure have not been done

Motrin Tablets can inhibit **platelet aggregation** and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and on anticoagulant therapy.

Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, skin rash, weight gain, or edema.

Patients on prolonged **corticosteroid therapy** should have therapy tapered slowly when *Motrin* Tablets are added

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As with other nonsteroidal anti-inflammatory drugs, borderline elevations of liver tests may occur in up to 15% of patients These abnormalities may progress, may remain essentially unchanged, or may be transient with continued therapy Meaningful elevations of SGPT or SGOT (AST) occurred in controlled clinical trials in less than 1% of patients. Severe hepatic reactions, including jaundice and cases of fatal hepatitis, have been reported with ibuprofen as with other nonsteroidal anti-inflammatory drugs. If liver disease develops or if systemic manifestations occur (e.g eosinophilia, rash, etc.), *Motrin* should be discontinued

Drug interactions. *Aspirin:* used concomitantly may decrease *Motrin* blood levels

Coumarin: bleeding has been reported in patients taking *Motrin* and coumarin.

Pregnancy and nursing mothers: *Motrin* should not be taken during pregnancy or by nursing mothers.

Adverse Reactions: The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal of which one or more occurred in 4% to 16% of the patients

Incidence Greater than 1% (but less than 3%)—Probable Causal Relationship

Gastrointestinal: Nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,* headache, nervousness; **Dermatologic:** Rash* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite, **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation, see PRECAUTIONS)

Incidence less than 1%—Probable Causal Relationship*

Gastrointestinal: Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma, **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia, **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS), **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit, **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting; anaphylaxis; bronchospasm (see CONTRAINDICATIONS), **Renal:** Acute renal failure in patients with pre-existing significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria, **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis

Incidence less than 1%—Causal Relationship Unknown*

Gastrointestinal: Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri, **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g. epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmias (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schonlein vasculitis; **Renal:** Renal papillary necrosis

*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

**Reactions are classified under "*Probable Causal Relationship (PCR)*" if there has been one positive rechallenge or if three or more cases occur which might be causally related Reactions are classified under "*Causal Relationship Unknown*" if seven or more events have been reported but the criteria for PCR have not been met

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis. Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d Do not exceed 2400 mg per day Mild to moderate pain: 400 mg every 4 to 6 hours as necessary

Caution: Federal law prohibits dispensing without prescription. MED B-7-S

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Upjohn The Upjohn Company
Kalamazoo, Michigan 49001

J-4791 August, 1984

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Answer: Adenoidal/Nasopharyngeal (A/N) Ratio

Tonsillectomy and adenoidectomy are the most com- ion pediatric surgical procedures in the United States. denoidectomy is indicated to relieve nasopharyngeal rway obstruction caused by enlarged adenoids, espe- ally if complicated by heart failure or associated with ecurrent and chronic otitis media. Since this is such a ommon problem, an objective method for assessing denoid size should be helpful in determining which atients need surgery.

The adenoidal/nasopharyngeal ratio is a useful way of ssessing the patency of the nasopharyngeal airway. On lateral radiograph of the nasopharynx, a line is drawn ong the straight portion of the anterior margin of the asiocciput. (Line X, Figure 2A) The adenoidal measure- ent is obtained by drawing a line (A) perpendicular to e first line at the point of maximum convexity of the denoidal air shadow. (Figure 2A) The width of the nasopharyngeal space (line N, Figure 2B) is the distance from the posterior edge of the hard palate to the sphenobasioccipital synchondrosis. This is usually approximated as shown.

The A/N ratio varies with age. It is smallest in the first few years of life, averaging about 0.33. It rises to a peak of approximately 0.6 by the fourth year of life in normal subjects, and then declines steadily through adolescence, in patients without adenoidal hypertrophy. An A/N ratio of 0.8 or greater is considered abnormal and indicates significant nasopharyngeal obstruction.

The A/N ratio of 0.8 in our patient indicated nasopharyngeal compromise. A throat culture done in the Emergency Department was positive for Group A Streptococcus, and the patient recovered after appropriate antibiotic therapy. If the nasopharyngeal compromise recurs, the patient will be considered for adenoidectomy.

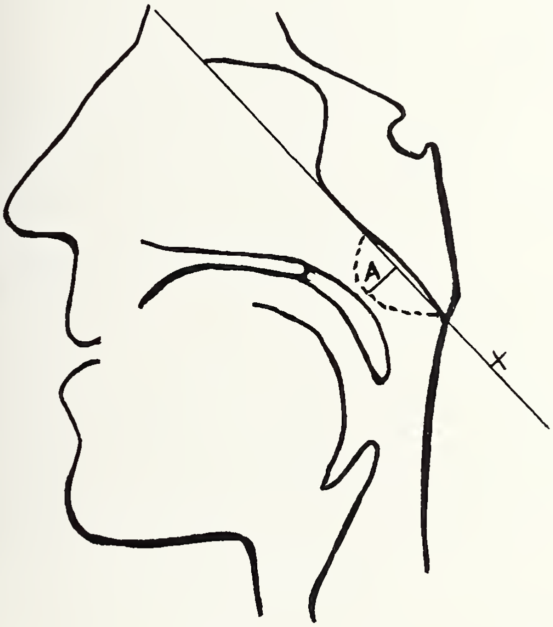

Figure 2a
Distance A represents adenoidal measurement (see text)

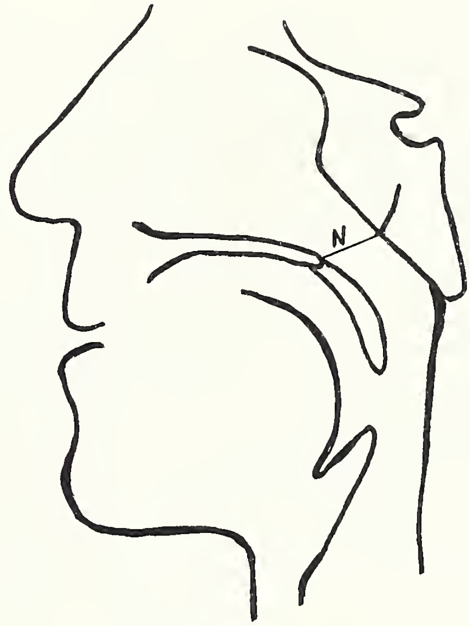

Figure 2b
Distance N represents width of nasopharyngeal space

Reference

1. Fujioka M, Young LW, Girdany BR: Radiographic evaluation of adenoidal size in children: Adenoidal-nasopharyngeal ratio. *Am J Roentgenol* 1979;133:401-404.

Special Article

Why Proposition 301?

Earl J. Baker, M.D.
President

Fellow physicians, these thoughts are submitted, both as a background of the Arizona health cost problem with 1984 efforts at its containment, and, to further aid you in convincing your patients — these latter deeply respectful of your opinion — to vote YES on Proposition 301 and NO on Propositions 109, 110, 200 and 302. This action has the unanimous support of the Arizona Medical Association Board of Directors.

The Problem

The U.S. total health and welfare budget in 1983 was 322 billion dollars. This is exceeded in the entire world only by the budget of the United States Government; number one, and the Russian government; number two. In 1984 it will exceed one billion dollars a day. It now measures over 10.5% of our gross national product and, at the present rate, Allan Greenspan, Chairman of the Social Security Reform Commission, has estimated that by 1995 there will be a 250 billion dollar Medicare cumulative shortage. Thus we do agree with the Arizona Coalition that a rising health cost problem is present and must be amended. However, we totally disagree with their single track, rigid regulatory solution.

Major reasons for this cost rise are due to both government intrusion and the relatively unlimited type of health care payment, i.e., full cost reimbursement. "Government insurance" fueled this cost increase and insofar as Medicare and Medicaid in the federal program were never adequately funded, a massive hospital cost shift ensued with residual, unpaid government cost being picked up by either third party insurance or self pay patients. The full cost reimbursement payment mode, a fiscal windfall, has predictively produced major, corporate hospital building expansion, this latter further aided by the ready availability of low interest community bond funding through the Industrial Development Authority (I.D.A.)

Both cost shift and principle of full cost reimbursement were tolerated in the past by corporations since such insurance costs have been a business deduction and remain a tax employee benefit. These costs were further accelerated by the physician's traditional goal of best possible patient care, despite average patient poor lifestyle, a rapidly increasing aging population now responsible for 25% of Medicare cost during the last six months of life, and continued technical innovation in
procedures, drugs and equipment. The Congressio
Office of Technological Assessment has estimated tl
such innovation caused 33% of the total Medicare c
rise between 1977 and 1982.

Present Federal Solutions: Paul Starr, author of t
Pulitzer prize winning *Social Transformation of Ame*
can Medicine, and our 1984 ArMA meeting princi
speaker, noted that the Nixon administration's 19
response to rising health care cost was to *increase f*
cost insurance payment and that this did not wo
Therefore, the 1980 Reagan administration's respor
has been that rising health costs require *less* such ins
rance, i.e., "cut out the cancer," and thus promote tru
market place type competition usage of all availa
funds. Therefore, the intent of this Congress has been
change payment from full cost to prospective cost rei
bursement via DRGs, to promote Medicare assignme
and to suggest continued change in the tax law, hea
insurance subsidy. The pro-competitive market h
been encouraged by promotion of alternate delive
systems, such as HMOs, PPOs and PPIs, and a shift
medical policy decisions from the Federal to the Sta
level, i.e., in Arizona via AHCCCS continued evaluati
and the November 6th five propositions.

The business community response has been that t
necessary subsidization of government Medicare inad
quate funding, up to now aided by their third pa
insurance program, can no longer be their conce
World competition will not tolerate an up to 20% rise
business health costs. Therefore, the Coalition has
posed rigid, statewide utility regulation of hospital
(which later may well average up to 56% of present to
health costs.)

The Hospital Association response is that governme
intrusion and regulation via inadequately fund
Medicare—Medicaid and now AHCCCS in Arizona (t
latter having as of August 1984, a bill of more than
million dollars overdue receivables to some 40 hospita
is and are major factors in rising health care costs. Co
trol by price freeze as witnessed in the 1970 "Nix
Freeze" failure has never worked in American busine
and rigid regulation, as witnessed by the Arizona Cor
ration Commission's failure to control energy costs
certainly not the Arizona answer.

Further, the present method of full cost insuran
reimbursement has promoted increased patie
demand and expectations, voided restraint of new tec
nology, and allowed for continued rise in pharmaceu
cal costs — and these all in the face of wage increases i
labor intense market — the latter responsible for up
60% of total hospital costs.

Physician control over hospital admissions a
requested tests and high government standards of exce
lence all add to this multi-faceted problem. Thus rig
control of hospital charges *alone* will not only fail
control health care costs but will result in smaller co
munity and rural hospital bankruptcy.

Finally, health costs are on a different scale of hum
life values than utility costs. Decisions based dominan

n cost control will definitely affect the quality of patient
are.

All admit to a cost control problem. The major con-
oversy relates to its method of cure. Approach to the
tter has been divided into three arenas: 1) Health
anning on a community, regional, and state level;
Capital Expenditures such as new hospital construc-
on bed expansion, new technology such as NMRs,
eonatal intensive care units, spinal injury rehab units,
c., and 3) Hospital Revenue Rate setting. The Coali-
on and the Hospital Association did approach agree-
ent on planning and capital expenditure. They could
ot agree on the Rate Setting hospital review issue.

What do the five November 6, 1984, ballot proposals
ffer? Proposition 110 is a constitutional amendment
hich allows for legislation to regulate health planning
nd utilization, capital expenditure, and revenue setting
any health institution. ArMA's legal opinion is that this
efinitely includes physicians' offices. This Proposition
omplements the Coalition's Proposition 200 and has no
epeal date. Proposition 109 is a similar constitutional
mendment allowing the legislature to impose rate lim-
s on hospital charges. It complements the legislature's
roposition 302 and will repeal December 31, 1990. Both
these Propositions may set a potential precedent for
ss of Arizona constitutional protection from rate set-
ng as applied to any business or profession. The Ari-
na Attorney General's 1984 opinion stated that both 109
nd 110 are unnecessary for the proposed legislations'
omplishment.

roposition 200 is the Arizona Coalition's corpora-
ons' proposal. In it, the Governor appoints and the
enate confirms three directors, experienced respec-
vely in finance, administration and health to regulate
health planning and rate setting in any medical insti-
tion. Capital expenditures do have five rigid excep-
ons. Final authority is independent of the Arizona
ealth Department. It will eventuate into an "all payor
RG" with rate settings specific to three peer hospital
roups, i.e., large, medium, and rural in nature. Rates
itially will approximate the 10/1/83 level.

From a physician's viewpoint, Proposition 200 requires
uthority approval for any physician, technological
xpenditure of over one million dollars or for introduc-
on of any technique of patient treatment for diagnostic
therapeutic purpose that is so new or not well enough
nown to have previously provided a "specific plan." It
equires annual report of the average length of hospital
ay by the individually named physician.

Proposition 302 is a legislative regulatory bill. It is
ossibly more thoughtful than 200 — the Coalition bill. It
milarly appoints three directors to regulate all rate and
pital expenditure decisions. Planning, however,
emains within the State Health Department. Rates are
RG based but are not initially so severe since they allow
r an 84-85 cost history, an Arizona case - mix index and
e divided into eight hospital type, rate peer groups.
ervice hospitals such as pediatric or those with less than
0% are exempted.

Physician aspects of 302: all hospital staffs are open to all MD, DO, and podiatrists without discrimination or limitation on total staff number. Proposed capital expenditure for osteopathic hospitals relate only to other osteopathic hospitals of the same region. Physicians must provide appropriate medical records to a requesting patient. The bill reiterates that average charges by each physician's per patient confinement must be available to public inspection at the Health Department.

The Solution

Proposition 301, which ArMA is in favor of, is the legislature's response in part to the 1984 Arizona Town Hall Symposium on Health Care Cost. Its principle "recognizes that government regulation in the area of health care is intrusive and is in fact the prime reason for higher health costs," i.e., the inadequate funding of Medicare and subsequent cost shift, etc. It thus directly challenges any legislation which claims that price freeze and hospital regulation will control health care costs.

However, 301 fully recognizes that interim health cost constraints must be applied. Therefore, it bans any newly requested hospital construction or bed expansion until April 15, 1986. No rate increases are allowed until January 1, 1986. Then such are limited to the combined average of the consumer price index and the gross national product, implicit, price deflator, or about 4% to 6% a year. Strict violation penalties are established.

Proposition 301 also establishes a legislator guided health cost containment committee to employ consultants to develop a pro-competitive market model for Arizona health care including study of: hospital costs, medical insurance, physicians' services, utilization, planning, certificate of need, malpractice and the full scope of a preventive, correct lifestyle health program.

Possible examples for this 301 cost containment committee study include: *Hospital Costs:* are there true patient cost savings in our new for-profit hospital corporate type ownership? — A review of the ease of hospital, revenue bond construction funding. *Insurance:* elimination of tax subsidized, first dollar coverage — in part a necessary labor-management compromise. Resolution of the traditional Arizona Industrial Commission fee schedules, cost shifting, which is an injustice to both physician and the working person. Provision for care of the "notch" group, who may number up to 80,000 in Phoenix alone. *Physician Services:* consideration for selected use of the new Maricopa Medical Foundation, consumer produced fee schedule to be released in October 1984, possibly the first such in the United States. *Utilization:* is presently physician controlled. Wennberg in the *New England Journal,* August 4, 1984, Study of Practice in Maine, concluded that varied physician admission patterns in adjacent towns could well make any DRG pricing system *more* expensive.

Planning: An Arizona specific data bank is mandatory yet not available. Our unique and well respected senior citizen population is a major example. Planning must involve all the people of Arizona, not just hospitals and corporations. *Malpractice* is up to 10% direct, 25% plus indirect as a total cost factor. This is borne now by the patient's bill and will increase with DRG rationing. Just and fair legislation as contingency fee limitation is a must for its control. *Preventive medicine* involves lifestyle change. Use of cigarettes resulted in an estimated total health care cost of 49 billion dollars in 1983. Cigarettes may in long-term total cost industry up to four thousand dollars per year for each employee smoker. Similar attention to diet, exercise and environment, including work stress factors, are all important and will require medical resource redirection for significant long-term health cost control.

Proposition 301 will be funded by $200,000 from the State General fund. Study results are to be implemented by presentation of new legislation to the Arizona Legislature not later than December 15, 1985. If a majority of all legislators do not pass a bill based on the health cost containment committee recommendations by April 14, 1986, then 302 the Legislative "Hammer" 302 regulatory bill, if also approved on the November 6th ballot, becomes law.

Conclusions

Arizona citizens do need health cost control. But proper legislation must include all aspects of health care and cost — including those specified in Proposition 301 — the Proposition which we support.

Strict regulation of hospital medical care costs as proposed in Propositions 200 and 302 represents a simplistic meat-axe, utility type solution to health care costs. Thi has not now and will not work in the future, i.e., th federal prototype, 1980 New Jersey, all payor DRG regulatory legislation has resulted in a 1983 15.4% hospita cost increase! Because of this cost increase, HFCA ha just withdrawn its New Jersey Medicare waiver. An Arizona specific study with adequate consultation and dat accumulation is mandatory for successful suc legislation.

The Arizona 1984 Town Hall on health care costs state that this "responsibility properly lies with the legislature." The Arizona Legislature, despite enormous partisan pressure has most correctly placed 301 on th November 6, 1984 ballot. This Proposition includes bot interim cost control and the establishment of a properl directed and funded study committee. This committe will examine hospital costs, medical insurance, physicia services, correct utilization, planning with proper data certificate of need, and use of preventive medicine.

The Arizona Medical Association strongly support this Sane, Rational, versus Rationing approach. If 301 i passed, this Association pledges full support to the Legislative special study committee for containment of healt costs which is to be balanced by provision for continue quality care to the citizens of Arizona — Our Patients

Communicate

To help patients communicate more effectively with their physicians, the Arizona Medical Association has developed two patient information brochures, HOW TO CUT YOUR HEALTH CARE COSTS and THE PATIENT-PHYSICIAN RELATIONSHIP, A WORKING PARTNERSHIP.

The brochures offer advice on telephoning and visiting the doctor's office, discussing fees, and exchanging information. They also answer frequently asked questions concerning health care costs, what physicians are doing about the problem, and how patients can help in the effort. ArMA is making quantities of the brochures available to members at 10 cents each or $10 per hundred. To order your supply, mail the attached coupon to ArMA.

— — — — — — — — — — — — — — — — — — — —

Lots of 100 may be purchased for $10	Single copies 10¢ each
(Non-members — $15	Single copies 15¢ each)

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Please send me ________ copies of the brochure *How to Cut Health Care Costs*

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City: ____________________ State: ______________ Zip: ______________

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______ 032 Chloramphenicol—Oral
______ 017 Cimetidine
______ 031 Clindamycin/Lincomycin—Oral
______ 016 Corticosteroids—Oral
______ 006 Coumarin-Type Anticoagulants
______ 005 Digitalis Medicines
______ 034 Ergot Derivatives
______ 010 Erythromycin
______ 026 Ethosuximide
______ 001 Furosemide
______ 024 Guanethidine
______ 022 Haloperidol
______ 023 Hydralazine
______ 035 Indomethacin
______ 015 Insulin
______ 038 Iron Supplements
______ 033 Levodopa/Carbidopa and Levodopa
______ 021 Lithium
______ 014 Methyldopa
______ 030 Metronidazole
______ 040 Nifedipine
______ 013 Nitroglycerin Sublingual Tablets
______ 011 Nonsteroidal Anti-Inflammatory Drugs
______ 007 Oral Antidiabetes Medicines
______ 003 Penicillins—Oral
______ 036 Phenylbutazone/Oxyphenbutazone
______ 019 Phenytoin
______ 037 Quinidine/Procainamide
______ 020 Sulfonamides
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The Ultimate Effect of Corporate Intrusion Into Medicine: No Medicine!

The rapid changes in health care delivery hinted at many times during the past several years in these columns have finally come to fruition. The federal chess game regarding health care with their multiple moves (DRG's, mandated reimbursement levels, P.R.O.'s, etc.), has resulted in a progressively more complex situation for those practicing medicine.

Local legislative action is adding to the burden, and now the introduction of for-profit corporate entities has further fragmented and changed the system.

For instance, the recent notice that Sam-Cor, the parent of Samaritan Health Services in Phoenix, is considering selling all of their institutions to a for-profit hospital chain is a dramatic change. The buy now, pay later philosophy so in vogue within our economic system has resulted in a rapid expansion of Sam-Cor with an unfortunate corresponding erosion of their perceived ability to remain afloat in our "competitive" environment. To the rescue comes a for-profit corporation which will bail Sam-Cor out of its future financial distress, but it may also cast overboard many expensive items like teaching programs, etc., to help keep it afloat. Also, recent newspaper articles have revealed that several midwestern major multispecialty for-profit clinics are now planning to put satellites in the growth areas of the United States. Henry Ford Hospital and now the Mayo Clinic are two such examples which are contemplating expansion to our shores. Add to this the rapid development of multiple PPO's within the Phoenix and Tucson metropolitan areas, the expansion of HMO's from Tucson to Phoenix, and the development of multiple IPA's (Pima Foundation, Maricopa Foundation, Arizona Physicians IPA, etc.), and we will have appetizing food for larger corporations to digest when the time is ripe. Corporate intrusion will only add to a confusing, distrustful, and competitive medical practice environment.

However, it will also erode what's left of any professionalism and will result ultimately in the demise of the medical system as we have known it. We will become a trade like any other, with each of us hiding our own special talents. This trend can already be seen at university centers where patents are being issued to primary investigators to protect their "discoveries" so that they, personally, can reap financial rewards once their value is established. Likewise, institutions are forming alliances with for-profit corporations because of cutbacks in federal funds. The results of such research, obviously, are given to the corporations for marketing and development. These arrangements will disrupt the free flow of scientific information which has been the hallmark of scientific advancement for centuries. With both corporate sponsored competition at the patient level and at the university-research level, the need to protect one's turf will hinder the passage of knowledge from one generation to the next. Where on a fundamental level will medical school faculty have new information to teach, or will they have to wait until a patent is approved before passing on their information to future physicians or researchers? Who is going to teach new doctors how to practice medicine? Will we be afraid to teach for fear that the new wave of physicians will be directly competing with us, in various modalities of practice, and thus draining whatever remaining patients exist? Where will the practicing physician want to refer his patient for a second opinion, or for expert opinions? Who will be the experts? How will they get their wisdom?

This scenario may be farfetched, but medicine is now big business, and as such corporations have altruistic notions only as surface markings. Corporations and venture capitalists may be "buying" or developing a "self-destruct" system. Time will tell just how far they are willing to go, but hopefully they will see the light before it is too late.

Marshall B. Block
Editor

Teaching and Research in Advanced Biotechnology

With the technological explosion of the e 70's and early 80's, clinicians are being erwhelmed with "new and revolution- y" diagnostic and therapeutic medical evices. Many are asking: "Which instru- ents do I buy?" "Since these measure- ents have not been routine in the past, ny should I consider them now?" As a sult, both the medical and industrial mmunities find themselves in a Catch : there are not sufficient data to justify mmercial development of medical evices, nor are the medical devices ecessary to obtain the data available. nce anesthesiologists represent an area medicine that utilizes a significant nount of equipment during the routine re of patients, an awareness and contin- l evaluation of applications of new chnological advances to the practice of esthesiology is essential.

In 1975, a group of anesthesiologists d engineers at the University of Ari- na undertook a program of assessing e impact and application of technology the delivery of anesthesia. Because of e initial success of the group, in 1979, a rmal arrangement was made between e Department of Anesthesiology of the ollege of Medicine and the Clinical gineering Program of the Department Electrical and Computer Engineering the College of Engineering. This agree- ent led to the development of the dvanced Biotechnology Section of the epartment of Anesthesiology. This uni- ue commitment includes joint appoint- ents of faculty into both departments; ared resources including funding, per- nnel, and equipment. The program has expanded that in 1984, it includes operative projects with the Depart- ents of Surgery and Internal Medicine the College of Medicine; the Depart- ents of Systems and Industrial Engineer- g and Mechanical Engineering in the ollege of Engineering, and the Colleges Nursing and Pharmacy. In addition to operative efforts within the University, ose ties have developed with private undations and industry in order to vance mutual goals of promoting the troduction of high technology into esthesia practice. An element crucial to e success of this program has been the nergism brought about by a multidisci- inary team approach to problem lving.

The principal mission of the Advanced otechnology Section is to implement ate-of-the-art technology into the prac- ce of anesthesia. In order to accomplish this primary mission, the functions of the group have been divided into three areas: clinical service, education, and research. It is evident that objectives overlap when specific programs are considered; nevertheless, the many activities are more clearly highlighted when considered within this framework. In addition, this type of framework provides support to faculty, undergraduate and graduate students from each of the participating groups. Further, they offer clinical exposure for both university and industrial engineering personnel who might otherwise design instrumentation without adequate knowledge of the user environment.

Clinical Service: Clinical service includes technical support to the department in a number of ways. For example, the section has inaugurated expanded preventive maintenance, equipment utilization review, and scheduled procurement programs for instrumentation in clinical and research areas at the Arizona Health Sciences Center (AHSC). These activities gain strength from close cooperation with other AHSC Divisions such as Biomedical Engineering, and Operating Room Services.

Education: The multidisciplinary educational projects of the Section found within the College of Medicine, AHSC, and University Hospital include seminars, lectures, and conferences for medical staff, students, and technicians. Courses are also taught in the College of Engineering as part of the interdisciplinary program. In addition, members of the group frequently speak at national and international meetings of physicians and/or engineers. Industrial seminars are sponsored for personnel who require exposure to the problems and user environment found in the highly competitive anesthesia device market. Principles of operation, design fundamentals, instrument selection, and maintenance of equipment are taught to attendees at these sessions.

Special educational programs have also been devised for engineering, nursing and pharmacology faculty, staff, and students. In these, participants receive practical experience via exposure to the clinical anesthesia "work place": operating rooms, recovery rooms, wards, and intensive care units. The real world problems thus encountered are conducive to their later making original and innovative contributions to improve health care delivery.

For several years, members of the Section have participated in the Tucson Unified School District-Professional Intern Program (TUSD-PIP). This is a career development program for outstanding high school students interested in medicine and/or biomedical engineering.

Research: Research conducted by the Section is primarily concerned with problems unique to Anesthesia. Current investigations include application of new technologies and engineering concepts in the development of a fully integrated anesthesia delivery system; patient monitoring (including instrument-patient and physician-instrument interfacing); real-time analysis of patient data using computers; and high-frequency jet ventilation. Bench engineering, animal, and clinical studies are undertaken as required. Fundamental and theoretical studies include mathematical modeling of such topics as the mechanisms and pharmacokinetics of anesthetic agents.

Today a number of private foundation and medical instrument companies support the Advanced Biotechnology Section through contracts and grants. Consultancy is provided involving all aspects of the clinical environment and the technology related thereto. Numerous scientific papers, abstracts, books, and presentations have resulted from the work of the Section.

Although the final impact of technology upon the practice of medicine and in particular anesthesiology is uncertain, only through multidisciplinary programs such as this can the cost/benefit and risk-/benefit ratios be adequately assessed. Application of technology to medicine will continue to increase but the actual implementation of such technology must be carefully and thoughtfully made.

Jerry M. Calkins, Ph.D., M.D.
Assistant Professor, Anesthesiology

Louis J. Kettel, M.D.
Dean

Arizona
Medicine

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Briefly Noted

M. Paul Capp, M.D., Professor and head of the Radiology Department at the University of Arizona College of Medicine, has been elected vice president of the American Board of Radiology.

Herbert G. Erhart, M.D., Springerville, and the Emergency Room staff at White Mountain Communities Hospital, were cited for their professionalism in a recent letter to the editor of the White Mountain Independent newspaper. The letter was written by a parent whose daughter was one of four children taken by ambulance to the hospital emergency room after inhaling chlorine gas at the swimming pool in nearby Eager.

Raymond O. Naumann, M.D., Tucson, a former resident in obstetrics and gynecology at the Arizona Health Sciences Center, has received the Upjohn Achievement Award as the "outstanding resident and educator 1984." The award recognizes "achievement and excellence in medicine." Dr. Naumann served his residency at AHSC from July 1980 to June 1984 and is now in private practice in Tucson.

Rhema Sayers, M.D., Douglas, was recognized as the Rural Health Professional of the Year at the 11th annual Rural Health Conference held recently at Northern Arizona University in Flagstaff. The conference was sponsored by The University of Arizona Medical School, Department of Family and Community Medicine, Rural Health Office.

Cecil C. Vaughn, M.D., F.A.C.S., Phoenix, was recently inducted into the American Society for Artificial Internal Organs and the International College of Surgeons. Dr. Vaughn attended the Second World Symposium on the Artificial Heart in Berlin, West Germany, in July.

Jack S. Weiss, M.D., Scottsdale, has been named a Fellow of the American Academy of Facial Plastic and Reconstructive Surgery.

The Arizona Medical Association welcomes the following new members:

Active Members

Maricopa

Karla Louise Birkholz, M.D.
Family Practice
6036 North 19th Avenue, No. 404, Phoenix
University of Minnesota - 1978

Paul Goodley, M.D.
Physical Medicine and Rehabilitation
1300 North 12th Street, No. 505, Phoenix
University of California
Los Angeles School of Medicine - 1959

Dipak Kumar Jana, M.D.
Internal Medicine
5310 West Thunderbird Road, Glendal
National Medical College, India - 197

Gregory Alan Langford, M.D.
General Practice
2740 South Alma School Road,
No. 1, Mesa
George Washington University - 1983

Leonard Ivan Levine, M.D.
Family Practice - Psychiatry
240 West Osborn Road, Phoenix
Dalhousie University, Canada - 1967

J. Richard Melendez, M.D.
Child Psychiatry
3352 East Camelback Road,
No. C, Phoenix
University of Missouri - 1966

Joseph James Sandor, M.D.
Family Practice
11843 El Pueblo, No. 17330, Fountain Hil
University of Wisconsin - 1977

Bendy K. So, M.D.
Plastic Surgery
375 East Virginia Avenue, No. B, Phoeni
Loma Linda University - 1976

Navajo

Curtis C. Andrew, M.D.
Internal Medicine
Route 2, Box 1740, Unit 6, Lakeside
University of Washington - 1979

Pima

Mavis J. Donnelly, M.D.
Psychiatry
430 North Tucson Boulevard, Tucson
University of Connecticut - 1980

Robert W. Emery, M.D.
Cardiovascular Surgery, Thoracic Surger
1501 North Campbell Avenue, Tucson
Tufts University School of Medicine - 197

Jeremy A. McCreary, M.D.
Radiology
3170 East Fort Lowell Road, Tucson
University of North Carolina - 1978

Alma Murphy, M.D.
Ophthalmology
6701 Momoronick Drive, Tucson
Harvard Medical School - 1979

Mark J. Popp, M.D.
Obstetrics and Gynecology
310 North Wilmot, No. 307, Tucson
Medical College of Wisconsin - 1963

Allen Raczkowski, M.D.
Internal Medicine
1701 West St. Mary's Road, Tucson
Wayne State University - 1977

Correspondence

itor:

would like to bring to your attention article in the May 1984 issue of Town d Country, a fashionable magazine en in many of our offices.

he article is entitled "*Town and Coun- 's Guide to the 150 Best Doctors in erica—Part I.*" Part II was expected in June issue.

n this article, a long list of physicians oughout the country is listed, broken by specialty.

s one reviews the list, there is no ques- n that it is mainly institution oriented, most of the physicians mentioned are f of the large institutions. Indeed in introduction to the article the author mits to favoring institutions as "there is more critical climate and physicians re are more likely to be competent."

his article is not a service to the read- and is unjust and unfair to the vast pulation of physicians throughout this untry, especially those in private ctice.

have no argument with the compe- ce and excellence of the physicians ntioned, and many of them are known me within my field. Nevertheless, it ems unfair to single out this group less the study has been done in an propriate and exhaustive manner; and elieve it essential that our society pro- t very strongly to the Hearst Corpora- n who published this magazine.

believe that it is also important for you bring this to the attention of your mbers, so that they can make their n decision as to whether they would e to have this magazine continue to be their waiting rooms. I certainly will not ow it in my waiting room again.

would like to stress that I have not en personal insult and my reaction is ated to the injustice that this article has ne physicians in general.

onard Joffe, M.D.
cson

I submit the following poem entitled *"The Weaker Sex,"* which was written by Dr. Benjamin Milder of St. Louis, Missouri. I heard it at the 45th reunion of my WU class and found it amusing; therefore, with Dr. Milder's permission, I would like to share it with the readers of *Arizona Medicine.*

Darwin W. Neubauer, M.D.
Tucson

The Weaker Sex

In "My Fair Lady," the composer
Presented something of a poser:
"Why can't a woman . . . . ." the song began
"A woman be more like a man?"

There are answers to that query.
Some are facts and others theory.
They have no beards — not even stubble,
And none of them has prostate trouble!

Some are bold and some show meekness
But the thing for which they show uniqueness
Is, to employ the layman's jargon,
They just don't have a "prostate organ."

Women should be mighty grateful
That each of them was spared that hateful
Organ which, without one's knowing,
Quietly continues growing.

It seems that is is dedicated
To keep on growing, unabated . . . . .
And it's one gland that needs no feeding.
Its own voice is all that it's heeding.

Onward, upward, it keeps inching
Unhesitating, never flinching,
And just when you think it's stopped growing
It takes a deep breath and keeps going.

Continued on next page

Day and night, it's the same story:
Visits to the lavatory.
Slow in starting, slow in stopping,
From time to time, the floor needs mopping.

And, finally, when at its zenith
It starts to do things to your penith,
Multiplying your frustration
Over your elimination.

At last, when it needs further urgin',
You'll consent to see a surgeon
Who will repair that leaky faucet . . . . .
But watch that bridge, before you cross it!

'Cause, though with surgery, it's stated
Your sex life is not mitigated,
Still, the awful thought is numbing
'Bout what could happen from that plumbing.

All who are octogenarians
Including Chinese and Hungarians—
Should band together and petition
For laws to aid their micturition.

And thus avert a T.U.R.
And all procedures similar
Including supra-pubic cutting . . . . .
And opt, instead, for doing nutting.

And lawyers should prepare a tender
To offer to the female gender
Our prostates, so they won't be jealous,
And they'll soon learn just what befell us.

For, even in the women's movement
A prostate gland is no improvement
And, though they are egalitarian
Their chief concerns remain ovarian

And no one really could conceive
That "women's lib" is so naive
As to come forward with impunity
And ask for equal opportunity . . . . .

'Cause they know when they've got a bargain
In not possessing that one organ.

(Courtesy of Ben Milder)

Library
Talk

Citation Mania

Bertha R. Almagro

Citations can hold journals and scie
tists hostage in a life or death situation;
example being the recent demise of t
venerable *Johns Hopkins Medical Journ*
(JHMJ). Samuel Boyer, editor of the no
defunct journal, implied that the *Journ*
Citation Report played an instrument
role in the decision to discontinue
publication due to greatly reduced cit
tion ratings, indicative of the diminishe
impact of the articles published in JH
A scientist's career can also be affected
the extent and frequency with whi
his/her output is cited, since this seems
be the criterion by which tenures ar
promotions are awarded.

Although the quality of an autho
work is positively related to the numb
of papers published, quantitative citati
analysis should not be taken as the so
indicator for excellence and success. St
tistics indicate that at least 25% of
scientific papers are never cited eve

From Bertha R. Almagro, Assistant Librari
for Processing Service, University of Arizo
Health Sciences Center Library, Tucson, Ari
ona 85724.

e and that the mean annual rate of
ion of the papers that are cited in a
n year is only 1.7. This indicates that
modal rate is only once per year.[1]
tions can be compared to the circula-
patterns of books. If a paper has been
d, its chances of being cited again
ease. By the same token, if a book's
rious edition has circulated exten-
y, its chances for future editions to
ulate heavily also increase.

tations cannot be used as single indi-
rs of excellence, since the increasing
ber of specialty journals being pub-
ed and the limited time available for
ling them can dramatically influence
pattern of citation. More readers are
ing from general titles (*New England
rnal of Medicine, Lancet, Journal of
American Medical Association, Brit-
Medical Association*) and concentrat-
on titles within their own specialty.
same applies to journals in areas of
pheral interest to their specialties;
e is simply not enough time to read
n.

substantial number of titles (like
e mentioned above and many others)
perused to acquire overall informa-
in the same manner that the average
der scans a number of popular titles
e, *Newsweek*), the object being to
informed of what is going on. Even if
e journals were read and the informa-
gained useful, they would not be
d since the intended purpose is not
same as when a scientific journal is
l.

hat is the importance of having one's
ers cited extensively? For one, it
blishes the veracity of the author's
rtions, and an opportunity to point
his/her original contribution. Pres-
and the advancement within acade-
can depend to a great extent on the
uency with which articles are cited.
re most citations an honest indication
he writer's intimate knowledge of the
d, or rather a calculated selection of
ers that support the author's view-
nt as opposed to adding substance or
ectivity to the argument? Is the use of
tions a scheme for self-aggran-
ement by telling the world how well-
d the author is, or is it an honest effort
llow the readers to enter a new field
providing appropriate background
rmation?
ll knowledge of the reasons why an
hor cites is colored by a multitude of
ors involving social and psychological
ables. The author's perception of the
dership's requirement and expecta-
s, the character and status of the journal cited, and the scope, format, aims and length of the cited paper(s) itself can all be used to create impact and augment visibility, thus establishing the author's "pedigree of ideas."

Some authors become "citation addicts," and as might be expected self-citation is frequent, averaging about ten percent for an individual author. How many citations can be attributed to the product of actual reading and how many have been accumulated by accretion after they were referred by someone and became part of the author's bibliography is hard to determine. Sometimes articles become an excuse for a virtuoso display of citations!

The mere act of not citing can make citations a powerful weapon pointed at rivals who might have published some relevant paper. By the same token, citing an extremely powerful adversary can be used as protection to avert criticism. Thus, citations can become receipts for credit.

Despite the window-dressing effect provided by the inclusion of an extensive list of citations, the truth is simple. Good papers will be instantly recognized by the scientific community and peers, regardless of the extent or lack of citations. Specialists in the field will know how a paper fits into the mainstream of science, therefore citations are no guarantee for quality. The reader's ultimate concern is with what the author has to say, not with the way in which the paper is dressed with citations. A diminishing trend in the number of citations might prove beneficial at various levels. First, time will be saved by typists, editors, printers, and proofreaders; second, money and space will be saved by journals, and third, those reading the paper will not feel impelled to read each one of the articles or works cited which tends to increase the already heavy load of keeping up with the current literature.

Authors should be encouraged to be more restrained and selective in their citation habits. This cannot be achieved until academia's "citation fetishism" is modified. Only then, citations will truly attain the metaphorical status awarded them by a writer whose words I quote: "Citations are frozen footprints in the landscape of scholarly achievement; footprints which bear witness to the passage of ideas."

Reference

1. Garfield E: Citation Indexing: Its Theory and Application in Science, Technology, and Humanities. New York, Wiley, 1979, p. 240.

ArMA Reports

EXECUTIVE COMMITTEE

A special meeting of the Executive Committee of the Arizona Medical Association, Inc., was held on Monday, August 13, 1984, at the Association's offices.

Following a presentation by Dr. Belton Meyer, Chairman of the Governmental Services Committee, the Executive Committee adopted on behalf of the Association a position paper regarding The Statewide Health Coordinating Council's Proposal: Controlling the Diffusion of Innovative Medical Technology in Arizona, which position is available for review at ArMA headquarters.

In accordance with the action of the Board of Directors taken on July 28, 1984 to actively support Proposition 301 and oppose all other health care propositions to be on the November 6 ballot, staff presented and discussed with the committee members an action plan developed for carrying out an in-depth program to educate physicians and their patients and seek support for passage of 301. Following a lengthy discussion the committee took the following actions: It was moved and carried to approve the physician/patient /public education program for all Arizona licensed medical doctors, encouraging passage of Proposition 301 and defeat of Propositions 109, 110, 200 and 302, as outlined in the action plan dated 8/13/84 and authorize staff to expend the necessary funds to accomplish same, with the Executive Committee to constitute the "Yes on 301" Committee. It was moved and carried to ask Arizona licensed osteopaths, podiatrists and dentists to join us in our effort.

It was agreed that, should such groups be willing to participate, we would follow the identical program for them as is planned for Arizona physicians and request financial assistance from these groups, as well as nonmember physicians, since the outcome affects all health care professionals and the program, at this point, is being solely supported by ArMA members. It was moved and carried to communicate with all other health professional groups, such as nurses, chiropractors, pharmacists, etc., setting forth our position and requesting their support, as well as apprising them of the materials which could be made available through purchase from ArMA's printing department, should they desire to initiate a like campaign for passage of Proposition 301.

SCIENTIFIC ASSEMBLY COMMITTEE

A meeting of the Scientific Assembly Committee of the Arizona Medical Association, Inc., was held on Saturday, July 21, 1984, at the offices of the Association. Robert M. Anderson, M.D., Chairman, presiding.

The committee reviewed the 1983-84 Current Perspectives programs, attendance, etc., and approved the following series for the 1984-85 Current Perspectives:

October 17, 1984—Wednesday
1:00 to 5:00 p.m.
Phoenix — ArMA Building
PARENTERAL NUTRITION
Gary L. Henderson, M.D.,
Coordinator

November 7, 1984—Wednesday
1:00 to 5:00 p.m.
Phoenix — ArMA Building
CHILD ABUSE
W. Scott Chisholm, M.D.,
Coordinator

December 12, 1984—Wednesday
1:00 to 5:00 p.m.
Tucson — PCMS Building
THE BURNED OUT PHYSICIAN
Marshall B. Block, M.D.,
Coordinator

January 16, 1985—Wednesday
1:00 to 5:00 p.m.
Tucson — PCMS Building

January 17, 1985—Thursday
1:00 to 5:00 p.m.
Prescott — VA Hospital
CARDIOVASCULAR DISEASE
Robert M. Anderson, M.D.,
Coordinator

February 13, 1985—Wednesday
1:00 to 5:00 p.m.
Phoenix — ArMA Building
DERMATOLOGY
Jerome H. Targovnik, M.D.,
Coordinator

March 13, 1985—Wednesday
1:00 to 5:00 p.m.
Phoenix — ArMA Building
THE CHANGING MEDICAL SCENE/
IMPACT ON PHYSICIANS
or
MEDICINE IN THE 90's
Earl J. Baker, M.D.
and
Stuart I. Holzman, M.D.
Coordinators

It was moved and carried that, during the 1985 Annual Meeting, we would have a full day with three or four subjects being presented. Dr. Anderson was to make arrangements for this and poster presentations were to be included.

BOARD OF DIRECTORS

The ArMPAC Board of Directors meeting was held
Thursday, July 26, 1984, at the Ramada Inn, Casa Gra
Arizona.

Treasurer's report was distributed at the meeting. Ke
Walker advised the Committee that approximately $1,500
raised in July which would be added to the total funds
candidate distribution.

The Chairman suggested that the Committee follow the
of AMPAC and make the Treasurer a staff person becaus
the problems involved with last-minute signatures require
reports, checks, etc., and that the Assistant Treasurer b
physician. It was moved and carried to elect Kevin Wall
ArMPAC Executive Director, as Treasurer and Brendon
Thomson, M.D., as Assistant Treasurer.

It was moved and carried to elect Iain A. D. Todd, M.D.
Secretary, contingent upon his acceptance.

A telemarketing test program, developed by AMPAC
subsidized by them, was in the packet distributed at
meeting. This test is geared to individuals who have not joi
ArMPAC/AMPAC.

Before discussing contributions, a round of applause
given to William N. Neubauer, M.D., for his leadership rol
the ArMPAC Board last year.

The following campaign contributions were approved a
much discussion:

District	Senate	House
1	John Hays (R)	Don Aldridge (R)
4	A. V. "Bill" Hardt (D)	Polly Rosenbaum (D)
5		Frank McElhaney (D) Bob McLendon (D)
6	Polly Getzwiller (D)	Henry Evans (D)
7	Peter Rios (D)	Roy Hudson (D) Dick Pacheco (D)
8	Ed Sawyer (D)	Joe Lane (R)
9	Jeff Hill (R)	Bart Baker (R)
12	John Mawhinney (R)	Pete Hershberger (R) Jack Jewett (R)
13	Greg Lunn (R)	David Bartlett (D)
14	Bill DeLong (R)	Cindy Resmick (D) Jim Green (R)
16	Wayne Stump (R)	Karen Mills (R)
18	Tony West (R)	Burton Barr (R) Jane Hull (R)
19		Nancy Wessel (R)
20		Debbie McCune (D) Glen Davis (D)
21	Carl Kunasek (R)	Leslie Johnson (R)
22		Art Hamilton (D) Earl Wilcox (D)
23		Carolyn Walker (D)
24		Chris Herstam (R)
25		Elizabeth Rockwell (R)
26	Peter Kay (R)	Jim Meredith (R)
27	Juanita Harelson (R)	Bev Hermon (R) Doug Todd (R)
28	Robert Usdane (R)	Heinz R. Hink (R) Jim Skelly (R)
29	Jack Taylor (R)	Lela Steffey (R)
30	Stan Turley (R)	Mark Killian (R) James Sossaman (R)

Additional contributions will be made within a few wee
This year the checks will be presented to the candidates b
physician to emphasize personal involvement.

evin Walker reminded the Commit- that a prerequisite to being a Board mber is membership in the PAC. He ed everybody who is not yet a mber to join.

he Board was advised of the formation a Political Action Committee by the zona Psychiatric Society.

esignation of E. Luis Aguilar, M.D., n the ArMPAC Board was accepted.

Future Meetings

following institutions and organizations have accredited for their continuing medical ation programs by the Arizona Medical ciation and/or the Accreditation Council for inuing Medical Education.

zona Chapter, American Cancer Society
zona Medical Association
zona State Hospital, Phoenix
zona Thoracic Society/Arizona
ung Association
alter O. Boswell Memorial Hospital,
un City
melback Hospital, Phoenix
sert Samaritan Hospital, Mesa
e Eye Foundation
gstaff Hospital & Medical Center
f Northern Arizona
ood Samaritan Medical Center, Phoenix
alth Maintenance Associates, Phoenix
ricopa Medical Center, Phoenix
emorial Hospital of Phoenix
sa Lutheran Hospital, Mesa
oenix Baptist Hospital & Health Center
oenix Indian Medical Center
Joseph's Hospital & Medical Center, Phoenix
Joseph's Hospital, Tucson
Luke's Hospital & Medical Center, Phoenix
Mary's Hospital, Tucson
ottsdale Memorial Hospital
cson Hospitals Medical Education Program,
THMEP) Tucson
iversity of Arizona College of Medicine,
ucson
terans Administration Medical
enter, Phoenix
terans Administration Hospital, Prescott

accredited institutions and organizations above uce a variety of continuing medical education grams. Each accredited institution and nization is responsible for designating which of e programs meet ArMA's requirements for gory 1 credit. Physicians who participate in rams which are designated Category 1 by edited institutions will receive Category 1 credit rd the ArMA Certificate in CME and the AMA's sician's Recognition Award.

OCTOBER

Cereberal Localization During the Past Century
October 23, Tuesday, 4:15-5:30 p.m., first floor conference room, Barrow Neurological Institute, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona. Contact: John R. Green, M.D., Director.

Western Society of Allergy and Immunology
October 25-27, Radisson Resort, Scottsdale, Arizona. Contact: University of Arizona, Office of Continuing Medical Education and Outreach.

Pathology Conference
Series will be presented November 13, and December 11, at St. Joseph's Hospital & Health Center, 12:00 noon in the auditorium, 350 North Wilmot Road, Tucson, Arizona. Contact: Yvonne Clingerman, (602) 296-3211.

NOVEMBER

Fourth Annual Southwestern Poison Symposium
November 2-3, Scottsdale Hilton Hotel, Scottsdale, Arizona. Sponsored by Arizona Poison Control System, University of Arizona, College of Pharmacy, Tucson, Arizona and St. Luke's Hospital, Phoenix, Arizona. Credit Hours: 13, AMA, AAFP AzNA, ACEP, AOA. Contact: Office of Continuing Medical Education, U of A College of Medicine, Tucson, Arizona, 85724. (602) 626-6173

Fall Update Geriatric Medicine, Psychiatry, Pharmacotherapeutics and Substance Abuse
November 2-4, Nautical Inn, Lake Havasu City, Arizona. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U of A.

Anorexia Nervosa
November 6, 1984, St. Joseph's Hospital & Health Center, 350 Wilmot Rd., Tucson. Presented by George Comerci, M.D. 12:00 noon in auditorium

1984 Regional Meetings, American College of Physicians
November 16-17, Sheraton Hotel, Scottsdale, Arizona. Contact: William F. Denny, M.D., FACP, VA Hospital, South Sixth Avenue, Tucson Arizona 85723.

Arizona Chapter of American College of Surgeons—The Abdomen—A General Surgeon's Overview.
November 16-17, Rancho de los Caballeros, Wickenburg. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach.

Clinical Seminar Series—Sexual Dysfunction and Impotence
November 17, Holiday Inn, Mesa/Chandler, Arizona. Sponsored by University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach.

Diagnosis and Management of the Acute M.I.
November 9-11, Scottsdale, Arizona, Loews Paradise Valley. Contact: Beverly Jacobsen, Educational & Marketing Coordinator, International Medical Education Corporation, Englewood, Colorado, 800-525-8651. Course approved by the American Medical Association and the American Academy of Family Physicians. ECG and Acute M.I. course is approved by the American College of Emergency Physicians.

Parkinson's Disease Update
November 17, University of Arizona Student Union. Contact: Continuing Medical Sciences Center, Tucson, Arizona 85724, (602) 626-6173, Lynne Mascarella. Good for 8 hrs. Category 1 credit.

The Ventricular System, Cerebrospinal Fluid and Hydrocephalus
November 20, 4:15-5:30, Tuesday, Barrow Neurological Institute, first floor conference room, St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, Arizona. Contact John R. Green, M.D., Director. See upcoming dates for seminars on the History of the Neurosciences.

Fourth Assembly Meeting of the AMA-Hospital Medical Staff Section (AMA-HMSS)
November 29 through December 3, 1984, Hilton Hawaiian Village, Honolulu. Sponsored by Department of Hospital Medical Staff Services, American Medical Association, 535 North Dearborn Street. Chicago, Illinois, 60610. Contact: Gary L. Fetgatter, Executive Assistant, Division of Professional Relations.

DECEMBER

Clinical Seminar Series International Medicine
December 8, Holiday Inn, Mesa/Chandler. Contact: Office of Continuing Medical Education and Outreach, U of A College of Medicine.

13th Annual Radiology Seminar "Pulmonary Diseases"
December 14, 15, & 16, 1984, Camelback Inn, Scottsdale. Sponsored by Maricopa Medical Center. Contact: Alex Newman, M.D., Program Director, Department of Radiology, Maricopa Medical Center, P.O. Box 5099, Phoenix, AZ 85010. Approved for 22 hours Category I credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.
Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.
Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.
Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building
Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St. Joseph's Hospital & Medical Center.
Contact: John R. Green, M.D.
Approved for 1 hour Category 1 credit.
Cerebral Localization During the Past Century
October 23, Tuesday, 4:15-5:30 p.m., first floor conference room, John R. Green, Director
The Ventricular System, Cerebrospinal Fluid and Hydrocephalus
Tuesday, November 20, 4:15-5:30 p.m., first floor conference room, Hal W. Pittman, M.D., Chief, Section of Pediatric Neurosurgery
Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.
Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, Ed.D., Director of Education.
Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept. & Nov.
Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.
Surgery of the Large Bowel
October 23, David Alberts, M.D. & Hugo Villar, M.D., University of Arizona Health Sciences Center. Approved for Category 1 credit hours. 12:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
The Emergency Treatment of Angina Pectoris
October 24, W. Scott Robertson, M.D., Scottsdale, Arizona. Approved for Category 1 credit hours. 12:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
Surgery of the Biliary Tract
November 27, Charles Witte, M.D., Approved for Category 1 credit hours. 12:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
Dermatologic Manifestations of Systemic Disease
November 14, Stephan Billstein, M.D., Roche Laboratories.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOEN

1747 East Thomas Road, Phoenix, Arizo 85016. Contact: Medical Staff Secretary additional information.
Physicians Continuing Education Progr
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 8571 Contact: Eric G. Ramsay, M.D. Approve for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

Medicine Department Meeting
1st Friday, 12:15 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinica Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rn

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

mor Conference
d & 4th Wednesday, 12:00-1:00 p.m.,
nf. Rms. E-F.
rgical Grand Rounds
ekly, Thursday, 7:00-8:30 a.m.,
nphitheater.
mily Practice
ekly, Thursday, 12:00-1:00 p.m.,
mily Practice Center.
dical Noon Conference
ekly, Thursday, 12:00-1:00 p.m.,
3 Conf. Rm.
nt Tumor Gyn Conference
d Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
dicine Grand Rounds
ekly, Friday, 8:00-9:00 a.m.,
nphitheater.
urology Grand Rounds
ekly, Friday, 12:00-1:00 p.m.,
nphitheater.
ychiatry Grand Rounds
ekly, Friday, 11:00-12:00 noon,
nf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

00 E. Ajo Way, Tucson, AZ 85713.
ntact: Eric G. Ramsey, M.D., Approved
Category 1 credit.
rgical Conference
ekly, Monday 8:00 a.m.,
ntact: Eric G. Ramsey, M.D.
dical Conference
ily, 12:30 p.m.,
ntact: Chief Medical Resident
/GYN Pathology Conference
ekly, Thursday, 1:30 p.m.,
ntact: James Byers, M.D.
ychiatry Journal Club
ekly, Thursday, 12 Noon, Contact:
se Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

02 W. Campbell Ave., Phoenix, AZ 85008.
ntinuing Medical Education Program
d & 4th Wednesday, 12:30 p.m.,
nference Rms.
mor Board
& 3rd Mondays, 12-1 p.m.,
dical Conference Rms.

MARICOPA MEDICAL CENTER

01 E. Roosevelt, Phoenix, AZ 85008.
ntact: Leonard Tamsky, M.D.
esthesiology Morbidity & Mortality
nference
ekly, Mondays, 2:45 p.m.
rgery Burn Grand Rounds
ekly 7:30 a.m.
dicine Chest
& 3rd Monday, 12 Noon.
dicine GI
d & 4th Monday, 12 Noon.
dicine Dermatology
Monday, 12 Noon.
est/Surgery
ekly, Mondays, 1:30 p.m.
nbulatory Pediatrics
ekly, 2:45 p.m.
3 Problem Conference
ekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m.,
Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m.
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon.
Contact: Neil Shernoff, M.D.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m.
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7:30 a.m.
Anesthesiology Journal Club
4th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
4th Thursday, 8:00 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12:30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon,
5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon,
5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D.,
Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m.,
Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251. Contact: Tom Disney, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.
Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am. - 8:30 am., Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
A Talk on Allergies
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Joint Liver Conference - Lab Conference Room
2nd Monday of each month - 12:00 noon.
Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

CONTEMPORARY APPROACHES TO SEXUAL FUNCTION/DYSFUNCTION

January 24—27, 1985, Park City, Ut
Emphasis on etiology, diagnosis and tre
ment — Four day program allows for ma
mum learning with ample opportunity
skiing. CME & CE Credit. Contact: Conf
ence Office, Box A-5 1120 Annex, Univers
of Utah, Salt Lake City, Utah 84112 (801) 5
5809.

NINTH ANNUAL NEW MEXICO METABOLISM SYMPOSIUM

January 23—27, 1985, Tennis Ranch of Ta
New Mexico. Discussion will focus on d
related to our understanding of some aspe
of Type II Diabetes. Additionally, worksho
are planned which will focus on current use
insulin(s). We feel the program will prov
both practical and therapeutic insight
these areas of diabetes for the interested ph
sician. All meetings will be held in the conf
ence room of the Tennis Ranch of Ta
Registration fee for the meeting is $150
reduced fee of $75 is available for residen
fellows in training, nurses and physic
assistants. The meeting is accredited
twelve (12) hours of Category I AMA, Phy
cian's Recognition Award. Housing acco
modations will be available at the Ten
Ranch at Taos. Arrangements have be
made with Taos Ski Valley to provide spec
rates for ski lessons and lift tickets. Conta
Office of Medical Education, Lovelace Me
cal Center, 5400 Gibson Blvd., SE, Al
querque, New Mexico 87108. (505) 262-73

The XXXII Annual Convention of the Medical Society of the United States and Mexico will convene in Guadalajara, Jalisco, Mexico, November 14—17, 1984. For convention or membership informatic call or write: **Mr. Kevin Walker,** Executive Secretary, Medical Society of the United States and Mexico, 810 West Bethany Home Road, Phoenix, Arizona 85013. (602) 246-8901.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.
Anesthesiology Board Review Conferenc
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Drs. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.
Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.
Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dinin Room, C&D, Contacts: Drs. Otto & Zehngut.
Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Cente
Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m., Contact: Dr. Ewy.

diology Non-invasive Conference
ekly, Friday, 3:30 p.m.,
tact: Dr. Ewy.

son Cardiac Society
Thursday, 6:30 p.m., Arizona Inn,
tact: Karen Garcia.

ical Immunology, Allergy &
umatology Rounds
ry Friday, Noon-1:00 p.m. Contact:
n Boyer, M.D., Dept. of Internal
licine.

ebrovascular Disease Conference
ndays, 5:00-6:00 p.m., Weekly,
5505., Contact: Jerry Goldstone, M.D.,
t. of Surgery.

matology Conference
Monday, 5:15 p.m., AHSC,
tact: Dr. R. Friedman.

matology Rounds
ekly, Wednesday, 11:30 a.m.,
tact: Dr. Lynch.

Nose & Throat Conference
ekly, Wednesday, 4:00 p.m.,
tact: Dr. S. Coulthard

ocrinology Seminar
ekly, Thursday, 12:00-1:00 p.m.,
tact: Dr. Johnson.

ergency Medicine Grand Rounds
sdays, 9:00 a.m., AHSC,
tact: Dr. Sanders.

Pathology Conference
Friday, 1:30 p.m., AHSC,
tact: S. Paplanus.

Radiology Conference
& 4th Mondays, 7:30 a.m., AHSC,
tact: Dr. T. Hunter.

d & Neck Tumor Management
nference
ekly, Wednesday, 4:00 p.m.,
tact: Dr. Murrell.

natology-Oncology Clinical Conference
& 5th Tuesdays, Noon-1:00 p.m.,
6505. Contact: S. Salmon, M.D.,
t. of Internal Medicine.

dical Grand Rounds
ekly, Wednesday, 12:00-1:00 p.m.,
SC, Contact: Dr. J. Smith.

rbidity/Mortality in E.M.
Tuesday, 9:00 a.m., AHSC,
tacts: Drs. Hughes & Alcorn.

romuscular Disease Conference
ekly, Friday, 11:30 a.m.,
tact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC,
Contact: Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m.,
Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m.,
Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m.,
AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC
Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC,
Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC,
Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC,
Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining
Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC,
Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC,
Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC,
Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC,
Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m.,
Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact:
Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC,
Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact:
Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m.,
Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m.,
Rm. 1535F, UAHSC. Contact:
Irwin M. Freundlich, M.D.,
Department of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC,
Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC,
Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC,
Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC,
Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m.,
Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon,
AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m.,
Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC,
Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m.,
Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC,
Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon,
AHSC & VA Hospital
Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC,
Contact: Dr. J. Goldstone.

XXXII ANNUAL MEETING
of the
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Hotel de Paris, Monte Carlo, Monaco — March 16—2 1985. Sponsored by: Department of Pediatric Schneider Children's Hospital, Long Island Jewish Hillside Medical Center, New Hyde Park, NY. Facult Phillip Lanzkowsky, M.D., Jean Alexander Cortne M.D., Jane G. Schaller, M.D., and Irving Schulma M.D. Credits: 21 hours Category 1 ACCME, AMA an AAFP. Information: Continuing Education Coordinator, Long Island Jewish—Hillside Medical Center, Ne Hyde Park, NY 11042, (718) 470-2114.

Program Description:

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Ralph G. DePalma, MD
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Miles H. Irving, MD
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- ☐ *July 8–20 (from San Francisco, CA) 12 day Alaska/Canada - TSS FAIRSKY

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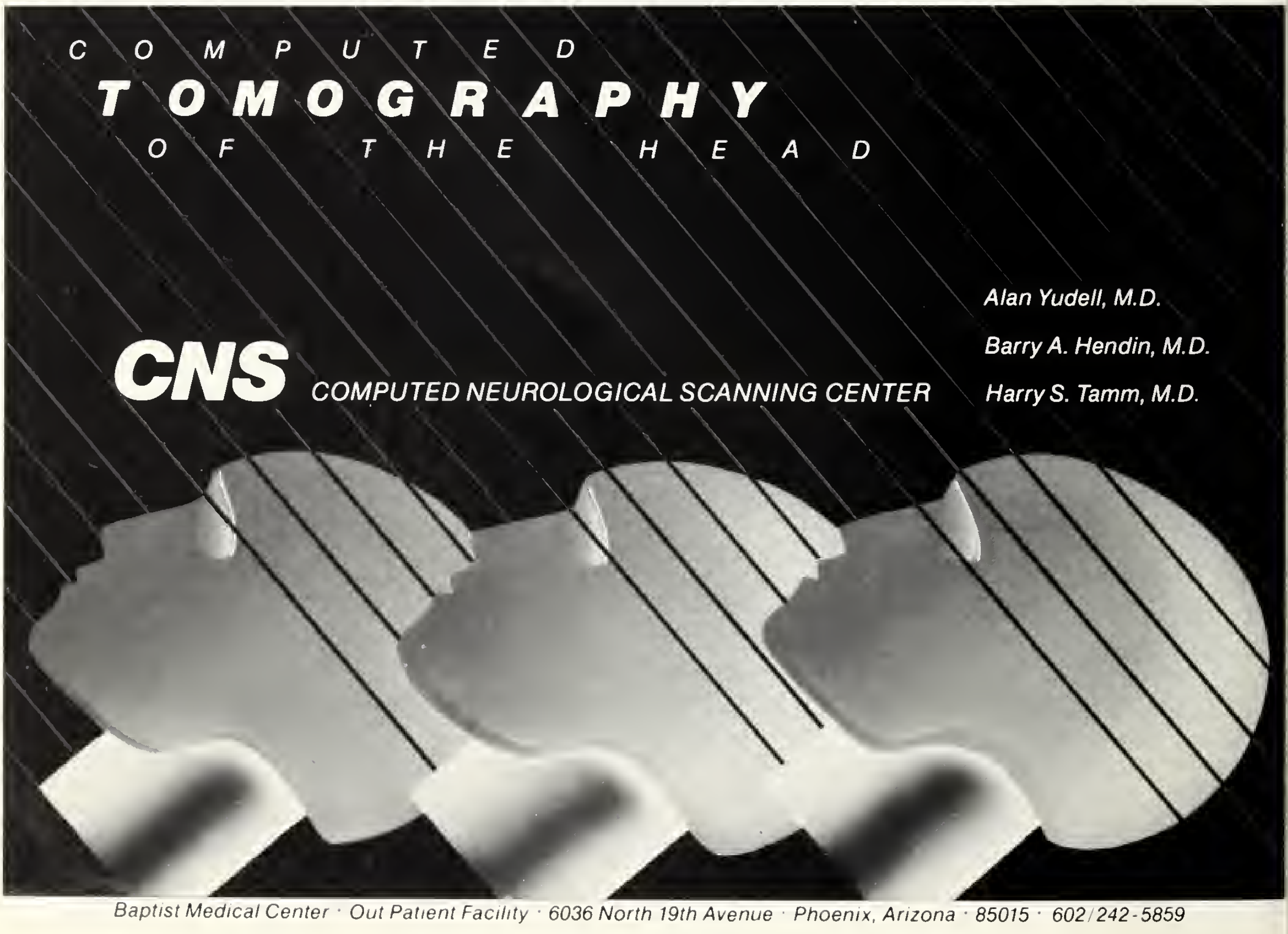

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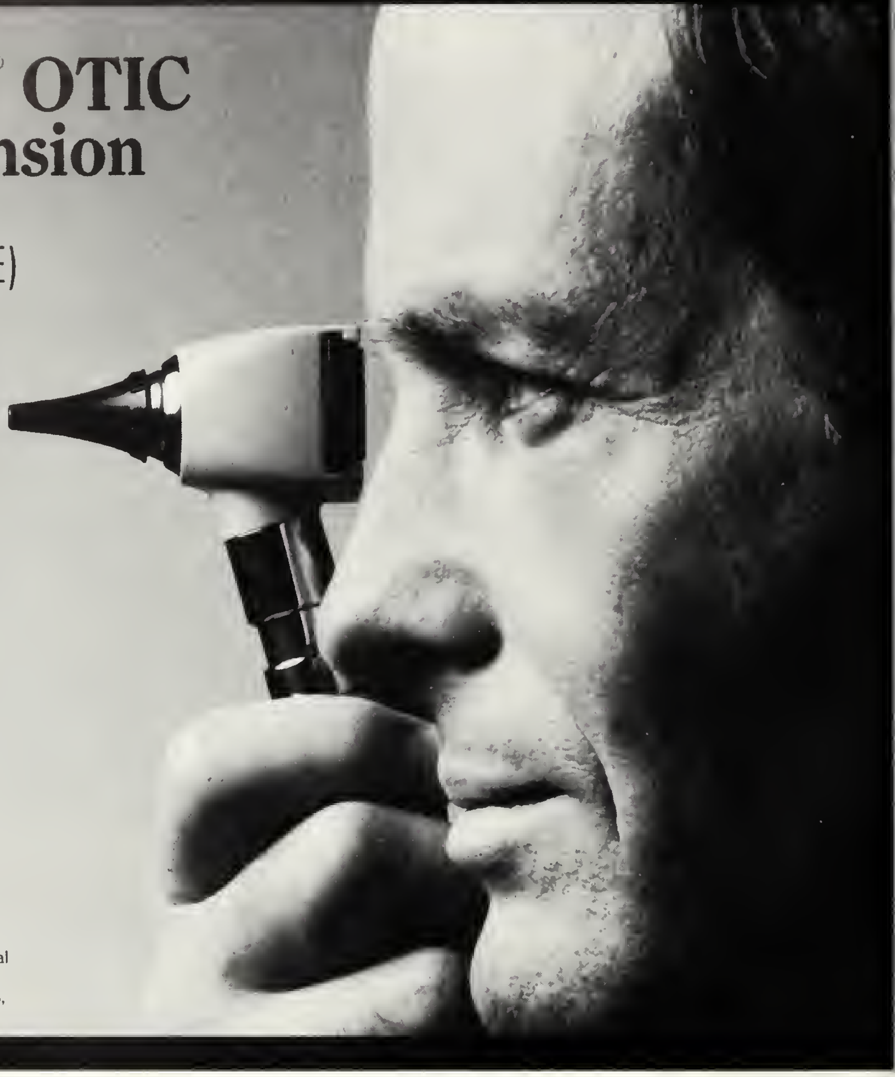

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Responders	195 (97.5%)

Adapted from Cassisi et al.[1]

REFERENCE:
1. Cassisi N, Cohn A, Davidson T, et al: Diffuse otitis externa: Clinical and microbiologic findings in the course of a multicenter study on a new otic solution. *Ann Otol Rhinol Laryngol* 86(suppl 39, pt 3):1-16, 1977.

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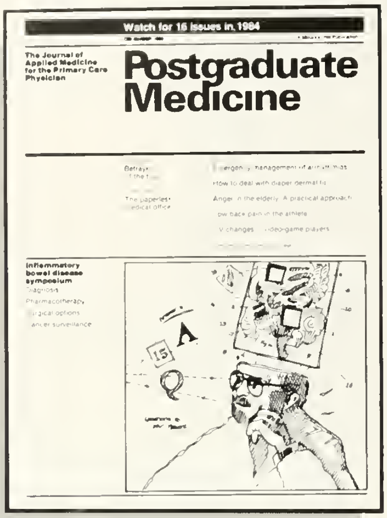

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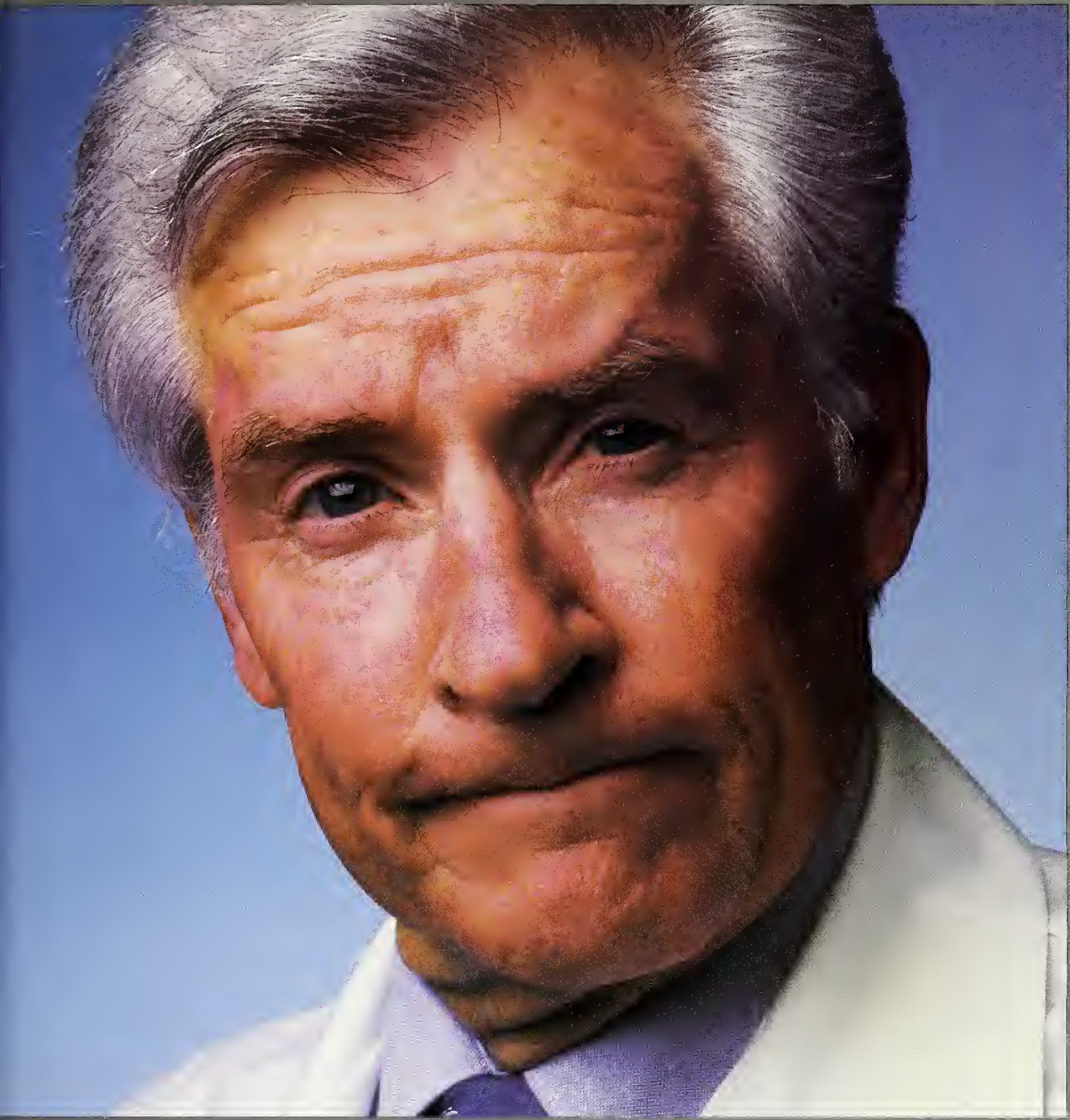

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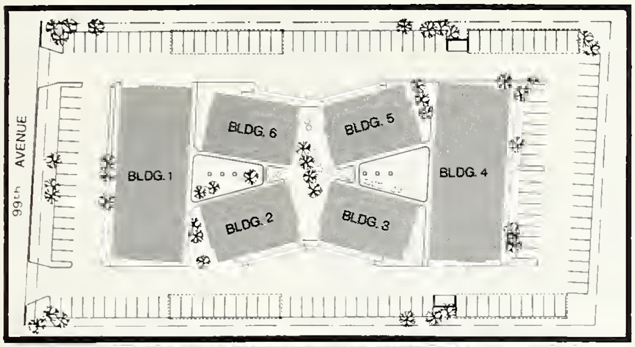

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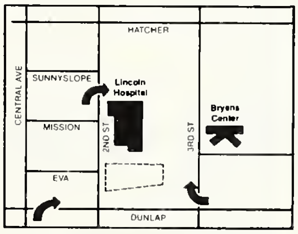

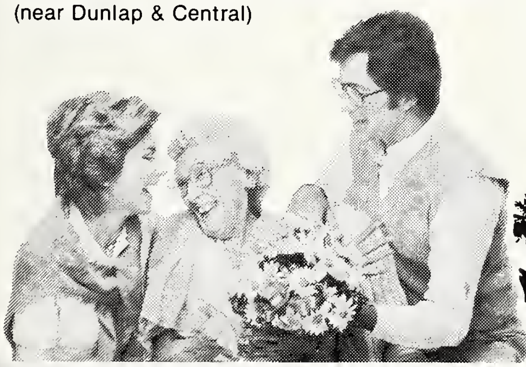

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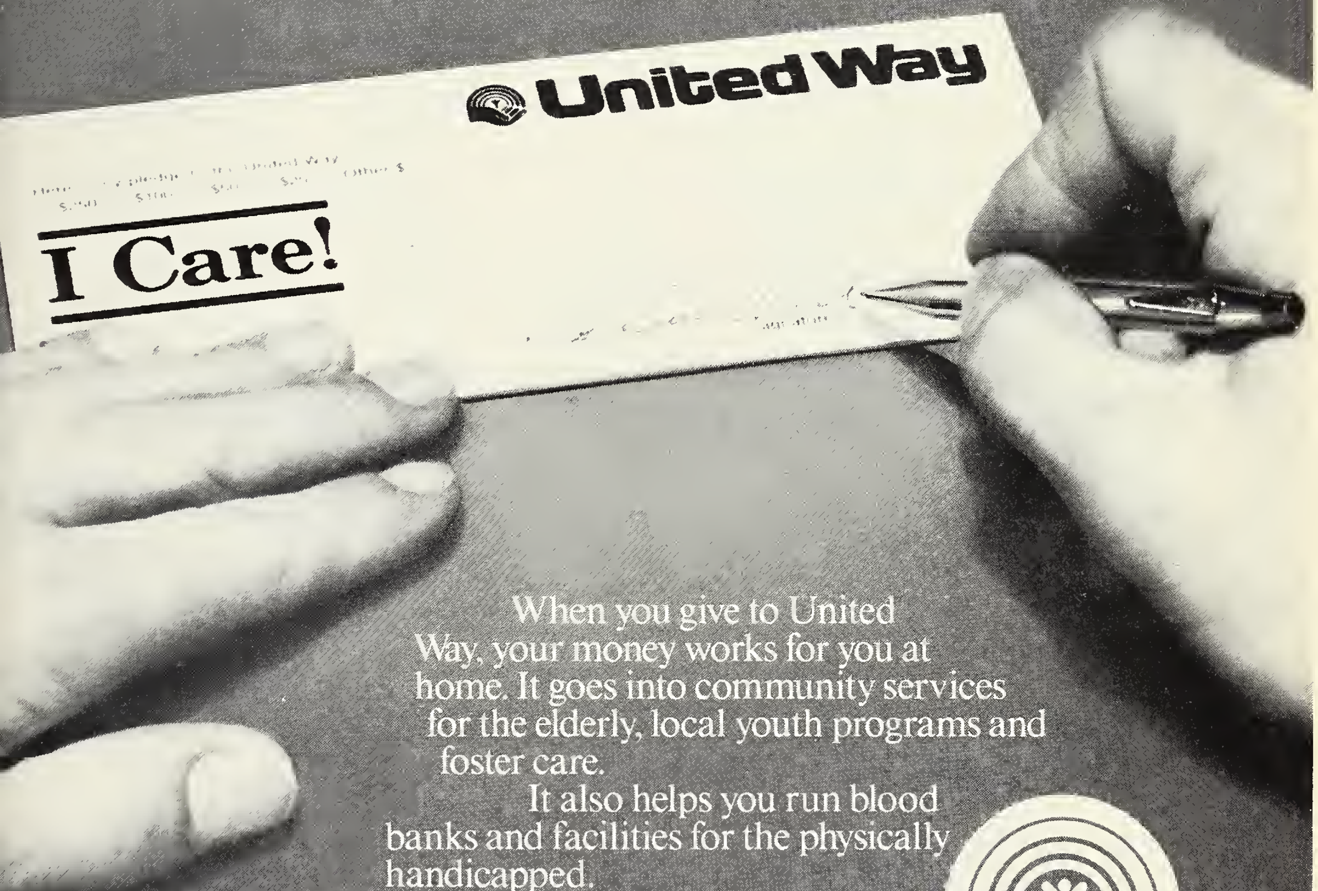

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Industrial Medicine

The Medical Fee Schedule

James L. Stevenson, Esq.

Physicians who regularly treat patients for industrial injuries are aware that professional fees for this treatment are regulated by a Medical Fee Schedule adopted and administered by the Industrial Commission of Arizona. The Industrial Commission also adopts rules and regulations to facilitate the use of the fee schedule. In addition to physicians, chiropractors and naturopaths are governed by separate fee schedules in treating industrial patients. Physicians confining their practices to anesthesiology and radiology are separately treated in the Medical Fee Schedule. In this regard the Commission has adopted the Relative Value Guide of the American Society of Anesthesiologists (1973 Ed.), and Relative Value Guide of the American College of Rad ogy (1973 Ed.) to assist in describing medical procedu in these respective fields. All of these fee schedules available from the Industrial Commission of Ariz upon request. It should be noted that the Commiss has drawn on California's experience and has adop portions of the Relative Value Studies of the Califor Medical Association. The Commission has no juris tion to regulate fees charged by hospitals or institutio medical providers.

Annually, the Industrial Commission reviews the schedules and determines whether fees should adjusted. Public hearings are held in April or May each year at which time the Commission welco input from the insurance industry as well as physicia groups and other medical providers. Although the C mission may change the actual description of a sch uled procedure or add new procedures, the prim focus is on the adjustment (or non-adjustment) of conversion factor. Of course, the conversion fac when combined with the relative unit value of the sc duled procedure determine the amount of the fee. N conversion factors or schedules of procedures go i effect on October 1 of each year.

At the conclusion of public testimony the Commiss adopts a new conversion factor or concludes that current factor will be continued in force an additio year. This decision then impacts the setting of premi rates for workers' compensation insurance coverage all employers throughout the state. These premiums approved in turn by the Arizona State Departmen Insurance.

The fee schedule performs a number of functic Initially, it should be observed that its primary functio to assist in controlling the total cost of workers' comp sation insurance coverage to all employers in the state regulating medical costs which have a direct impact the premium rate structure adopted by the insura industry. Although, in the matter of fees, the physic treating industrial patients may feel singled out greater attention than he or she believes is appropri it should be recalled that throughout the insura industry costs and premiums are regulated. Inde without this regulation the system in its present f could not have survived recent inflationary trends.

Additionally, the fee schedule creates uniformity efficiency in processing the large volume of med billings confronted by the carrier, a fact which sho not be lost on the physician's staff which faces dilemma of striving to treat the patient as a uni individual and still accomplish the handling of volu nous insurance paperwork.

However, as with any fee schedule, problems exis its administration. These problems range from the s ple but familiar communication problem between physician and insurance carrier to problems created developments in medical technology. Problems of c munication can usually be solved by the Industrial C

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sion's experienced staff. Technological advances in gnostic strategies and treatment, however, require riting the schedule itself. Such a change in the sche- e is not likely to occur on an annual basis. Ad hoc ngements must be made to account for the many diagnostic tools such as thermography, certain roscopic surgical techniques and in the case of treat- nt for such developments as chemonucleolysis and gical techniques employing laser technology. A phys- n who finds that a new development is not listed in fee schedule should contact the Commission to nge some agreement as to a reasonable fee. Physi- s' groups should insure that a new technique or tment and the ad hoc agreement as to its fee is nally adopted by the Commission into the new fee edule at the next annual meeting.

oblems also arise in reconciling the business practi- of the physician or institutional provider with which physician may be associated and the fee schedule. example, emergency room practitioners who cus- arily bill through the treating hospital may find their ngs increased by a late charge applied by the hospital ng system in charges unpaid beyond a stated period ime. Of course, since the fee schedule does not vide for such late charges confusion and delayed ment may result. Additionally, physicians not used to ting industrial patients may bill the patient for the erence between the fee charged and the fee paid suant to the fee schedule. This, of course, is inap- priate and contrary to the purpose of the fee sche- e statute. The patient cannot become obligated for a which does not arise out of the fee schedule. Such a understanding also delays payment and burdens the sician-patient relationship.

usiness practices of the insurance carrier may also te difficulties in the application of the fee schedule. ny carriers use independent auditing companies to ew billings for accuracy and appropriateness. While ent practice generally limits such audits to hospital ngs and those generated by institutional providers, billings of physicians may also become involved. ere a physician is involved it should be remembered only the Industrial Commission can definitively rpret ambiguities in the fee schedule.

n order to efficiently use the Medical Fee Schedule physician and staff should become familiar with the oductory portions of the schedule. These sections l with "Medicine Ground Rules" and provide gen- instructional advice. General information concern- workers' compensation law is also included. Both the mmission and the insurance carrier are available to pond to questions of the physician, however, the mmission is certainly a less "adversarial" source of rmation.

Close cooperation is required between the physician, carrier and the Industrial Commission in order to oncile the competing interests of all of the parties in efficient administration of the fee schedule and the ire workers' compensation benefits system.

Neurology

Carbon Monoxide Neural Toxicity with Report of A Clinical Case

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Abstract

Carbon Monoxide (CO) is among the most well known of human intoxicants. If not treated adequately, Co poisoning may be fatal. It affects all body systems. In this paper, the authors are discussing the neural toxicity and reporting a case. Although normalbaric oxygen therapy is effective in treating the victims, they recommend hyperbaric oxygen therapy. The case reported showed delayed neuropsychiatric phenomena which to a great extent have been reversed by hyperbaric oxygen therapy. These phenomena may develop in up to ten percent of the patients. They recommend the hyperbaric oxygen therapy in this group since it may help tissues that have not been completely damaged to recover to nearly normal.

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Introduction

Carbon mnoxide (CO) is among the most venerable of human intoxicants. It has been the object of research for over 100 years, although the gas was discovered by Priestley in 1799 and CO poisoning by Leblanc in 1842. Claude Bernard[1] described the hypoxic effects of Carboxyhemoglobin in the 1850s. In 1895, Haldane[2] published the results of his courageous self experimentation on the uptake of CO from inspired gas mixtures and the results thereof. In the 1900s, Douglas et al.[3] performed classic in vitro experiments on human blood to find the laws governing the combination of hemoglobin (Hb) with CO and O_2. They found that the relative ratio of CoHb to O_2Hb is dependent on the relative partial pressures of O_2 and CO in the immediate environment. CO has an affinity for Hb approximately 240 times that of O_2. Haldane's first law states: (CoHb)/(O_2Hb) = M (pCo/pO_2) where M is the affinity constant (240). Forbes et al.[4] in 1945 reported that the uptake of CO is inversely proportional to the partial pressure of O_2 confirming Haldane's first law. Coburn[5] reported that most of the CO in the body at any given time is in combination with Hb. About 10% to 15% is in the extravascular tissues, e.g. myopglobin (Mb) and other iron containing hemoproteins. He showed that, in anaesthetized dogs, when PO_2 is reduced below 60 mms HG CO shifts out of the blood presumably to the tissues. The CO appears in the blood when tissue Pa O_2 is restored. Roughton[6] found that CoHb shifts the O_2Hb dissociation curve to the left by more tightly binding that O_2 bound to the Hb. In the presence of CoHb, there is a lower tissue PaO_2 than with similar O_2Hb saturation caused by hypoxia. Wittenberg[7] found that myoglobin is apparently involved in the O_2 transport mechanism and plays as O_2 reservoir to be delivered when needed. The rate of formation of CoMb is expressed also by Haldane's[2] equation except the M = 40. Chance et al.[8] and Estabrook et al.[9] have found that CO inhibits the actions of cytochrome system directly by binding to these iron-containing proteins and that tissues with highest metabolic rates (heart and nervous system) are most susceptible to the effects. Goldbaum et al.[10,11] found that Co directly inhibits cellular respiration as its primary effect by competing with O_2 for receptors on the cytochrome chain primarily cytochrome a_3 and P-450. The same authors, working with dogs, demonstrated that the CO which is physically dissolved in the blood is more important than absolute CoHb levels. Under normal circumstances the physically dissolved CO is directly related to the partial pressure of CO in the blood, as is the level of CoHb, making the CoHb an important indicator of the body to CO burden. As blood perfuses tissue beds and becomes exposed to the locally increased pCo_2 and hydrogen-ion concentrations resulting from tissue metabolism, the affinity of Hb for O_2 is reduced, thus permitting improved O_2 transfer to the cells. This latter phenomena is called Bohr's effect. Halstala et al. [12] found that when O_2-carrying capacity of the blood is reduced by elevated CoHb concentrations, the magnitude of Bohr's effect is increased, thus offsetting to a small degree tissue hypoxia otherwise p duced. This may be important when the viability of t cells is critical.

In this paper, the sources, the intake and the elimi tion of CO will not be discussed since there is a v literature on the subject. Similarly the effects of (poisoning on the heart, lungs, kidneys, liver, eyes, e muscles, vessels, blood cells, etc., will not be discuss It is our intention to concentrate on the Co neural to city and present a case of CO encephalomyelitis. T detailed studies, pathological, clinical and experimen are reviews in the literature (Ginsberg[13,14]). Clinical ma ifestations of neurotoxicity will be tabulated in Table

Table 1
Clinical Neurological Symptoms of CO Poisoning

Headache
Dizziness
Impaired intellect
Unilateral/Bilateral pyramidal signs
Extrapyramidal signs
Restlessness
Anxiety
Disorientation to time and place
Hemiplegia
Dementia
Akinetic mutism
Amnesia
Idomotor, constructional and dressing apraxias
Dysphasia
Seizures
Abnormal manual dexteri
Dim vision
Disturbance of consciousness
Semicoma to coma
Irritability
Depression
Delirium
Lack of concentration
Parkinsonism
Lethargy
Confusion
Cortical visual failure
Finger and object agnosia
Dysgraphia
Delayed neurological changes

This will be discussed in more detail since our case represe delayed neurological manifestations of Co poisoning.

Grinker[15,16] was the first to report in 1925 delayed (neurological pathology both clinical and at autopsy. i case had the symptoms appearing 26 days after s initially recovered. At autopsy, there were bilateral sy metrical lesions of the globus pallidus with diffu demyelination of the subcortical hemispheral wh matter. Other reports came out later especially those Courville,[17] Garland,[18] Gordon,[19] Hsu,[20] Jacob,[21] Plum Schwedenberg,[23] Seitelberger,[24] Norris, et al.[25] a others.

The case histories and pathological changes ha been tabulated by Ginsberg.[13,14] The delayed deterio tion usually starts two to three weeks after the init intoxication, exceptionally after five to six weeks a rarely as early as two days or just after discharge from t hospital and resumption of the daily activities. M patients who develop delayed neuropathology a those who were initially deeply comatose and regain consciousness after one to two days and improv within about one week as to be discharged. In exce tional cases, the initial coma was not so profour According to Ginsberg who elegantly reviewed the ses, the onset is often sudden, heralded by sudden sorientation, confusion, excitement, restlessness, athy or inappropriate behavior. The symptoms are e to cortical, subcortical, cerebellar and basal gangli- ic changes. The cortical lesions may be multifocal anifested by dysphasia, agnosia and apraxia, loss of otor control, incontinence, seizures, rigidity and spas- ity. Parkinsonism may be well manifested. Akinetic utism with rigidity of all four limbs or flexion of the oper limbs and extension of the lower limbs may be oticed. Confusion with visual agnosia and catatonia ay be prominent. Mental abnormalities and psychiat- sequela are described e.g. affective disorders, psy- omotor retardation and frank psychosis.

thology

The neuropathological features of CO poisoning have een reported by many authors and are summarized by nsberg.[13,14] It should be mentioned that the effects of ute experimental CO exposure on cerebral energy etabolites and glycolytic and citric acid cycle interme- ates are not unique to CO but rather resemble those oduced by hypoxic hypoxia (Macmillan).[26] Similarly e neuropathological hallmarks of hypoxic hypoxia are oserved with CO as well (Brierley).[27] Other poisonous ses, e.g. carbon disulphide, nitrous oxide and illumi- ating gas may produce the same changes. Okeda et al.[28] und that in both nitrogen hypoxia and CO poisoning ypoxemia and subsequent hypotension are common d essential to produce cerebral changes especially in e white matter. CO, in addition, produces direct tion on intracellular respiration at very low O_2 tension. delayed CO poisoning the pathologic changes occur the cortex, putamen, dentate nucleus, hippocampus d globus pallidus. The latter is more specifically fected. Occasionally changes develop in the cerebel- m. Microscopically the changes are mostly Grinker's[15] yelinopathy most frequently in the globus pallidus and one half of the cases the hippocampal formation Ammon's Horn) and focal cortical necroses (Lapresle d Fardeau).[29] Ginsberg et al.[13,14] found in three relaps- g cases the white matter pathology was demyelinative, two cases it was demyelinative with focal necrosis and one it was necrotic. However, Ginsberg found that ommon to all cases of delayed neurological deteriora- on there was marked damage to the basal ganglia with elative degree of injury to the putamen, caudate and lobus pallidus differing in individual cases. It should be oted that occasionally delayed deterioration spares erebral white matter. Dooling and Richardson[30] stated at a relapsing clinical course may be observed on the asis of gray matter injury alone. In their studies, Lapre- e and Fardeau[29] in 22 fatal cases at the Hotel Dieu in aris, found four pathological groups, viz:

1. Globus Pallidus was necrotic in 16 out of 22 cases ostly bilaterally, typically within the internal portion of e globus above the anterior commissure and adjacent the anterior limb of the internal capsule and often ere is extension to the internal capsule or sublenticu- ar nucleus. The necrotic areas showed diapedetic hemorrhages, hemosiderin-laden macrophages and frequent deposits of calcium in the wall of the large vessels within the necrotic zone.

2. In ten out of their 22 cases, Lapresle and Fardeau[29] found lesions in Ammon's Horn (Hippocampus). The extent of necrotic changes is variable with profuse hemorrhages and pseudocalcium deposits. Either the entire horn was involved or only Sommer's Sector.

3. The white matter lesions are frequent and are either diffuse, multifocal or confluent or limited to few foci. They are associated with vascular alterations. The same picture as in the globus there are hemorrhages, hemosiderin-laden macrophages, astrocytic and microglial proliferation, fragmented and reduced number of axis cylinders. They are located in the centrum ovale, commissural structures particularly in the anterior portion of the corpus callosum. Vascular changes entail vascular obliteration due to endothelial edema and proliferation and sometimes pseudo-calcium deposition. In confluent areas this demyelination is very advanced with cellular infiltration and vascular modifications (Grinker's[15] demyelination).

4. Other lesions may involve the cerebral cortex, gray central nuclei, mesencephalon, hypothalamus and walls of third ventricle, brain stem, cerebellum and leptomeningeal reactions. The changes, however, depend on the severity of the intoxication viz, its onset, intensity and duration. Ginsberg[13] stresses the fact that clinical syndromes of delayed neurological deterioration may occasionally occur without injury to the cerebral white matter. He found that common to all there is marked damage to the basal ganglia. Dooling and Richardson[30] state that, on rare occasions, a relapsing clinical course may be observed on the basis of gray matter injury alone.

Brucher[31] in his detailed studies on CO poisoning and anoxia states that:

1. Encephalopathy of Co-origin does not present any lesion fundamentally different from those caused by other anoxic conditions.

2. In the course of anoxic accidents four principal factors can enter in the genesis of these lesions viz.: hypoxidosis, oedema, circulatory disorders of local or general origin and histotoxic action.

3. Each of these factors can become active at successive times and to a variable degree, which explains the polymorphism of the clinical evolution and anatomopathological picture in certain anoxic disorders of which the etiology is identical.

4. Any kind of anoxia can cause lesions in the white matter. One however cannot establish a correlation between this anoxic encephalopathy and the relapsing type of clinical evolution which may be seen in some cases of anoxia.

5. Anoxic encephalopathy does not seem to be dependent in the degree of anoxia.

6. Diffuse alterations of the white matter predominate in the centrum semiovale near the lateral ventricle extending along the axis of the convolutions to the cor-

pus collasum and the anterior commissure sparing the U-fibers.

7. Besides the diffuse alterations, there are circumscribed areas of total necrosis with edema and perivascular hemorrhagic suffusions.

8. Lesions of the gray matter are variable and can affect the cerebral, cerebellar cortices, the basal ganglia or brain stem. Necrosis of the pallidum is not specific to CO poisoning since it occurs in other types of anoxia.

9. Tissue hypoxidosis provokes cellular necrosis selective to the gray formations. This selective cellular vulnerability is called pathoclisis and it varies as a function of age, temperature, activity of the tissue at the time of anoxia and other factors. Cerebral edema with its ischemic effect, venous congestion due to anoxic myocardial damage with rising venous pressure and hypotension contribute to further damage. In addition, vascular changes, e.g., vasoparalysis, edematous and hemorrhagic suffusions, edema and proliferation of the endothelial lining thus compromising the circulation and producing further encephalopathy.

Co-Peripheral Neuropathy

Peripheral neuropathy due to CO intoxication seems to be a rare sequela. Snyder[32] reported two cases in a family intoxicated by CO; one with bilateral ulnar neuropathy and the other with bilateral facial neuropathy. The etiology is not clear but the possible causes are: hypoxia with ischemia, direct toxic effect of CO and compression in the comatose patient. Petajan et al.[33] did neurophysiological studies on rats exposed to CO. They found conduction studies unaffected until CoHb levels reached 60% to 70%. Decreased mean arterial pressure resulted in impaired neurological function. They commented that loss of nerve conduction, isoelectric EEG and loss of visual evoked potential, under the conditions of their experiments, were most closely associated with the presence of ischemia. Grunett and Petajan[34] showed loss of normal axonal and Schwann Cell structure by electron microscopy.

We could not come across any study on the effect of CO on the autonomic nervous system.

Clinically the incidence of neuropsychiatric sequelae of CO poisoning varies according to different authors from 0.3% to 10% (Shillito,[35] Garland,[18] Smith,[36] Mackay).[37] Most cases manifested signs of diffuse neurological involvement associated with some Parkinsonian features.

In rare cases the picture may be a pure Parkinsonian syndrome (Klawans et al.).[38] In the authors' case, they showed by CT scan bilateral destruction of the globus pallidus. The reported sequelae include: seizures, cortical blindness, object and finger agnosia, apraxia, transient deafness, Parkinsonism, incontinence, cognitive impairment, amnestic syndrome, psychotic states, chorea, spasticity, hyper-reflexia and polyneuritis. These are the results of scattered neuropathology explained above.

Therapy

The use of hyperbaric oxygen in the management CO poisoning has gained popularity as an effecti method of treatment. Oxygen treatment dates back Haldane[2] (1895), Mosso[39] (1900), Schmidt[40] (1926), En and Long[41] (1942), Pace et al.[42] (1950); but the first clinic application of HBO was reported by Smith and Sharp[43] 1960 and by Sluijter and Boerema[44] in 1962. The indic tions and contraindications have later been summarize by Sluijter.[45] A more recent report by Lacran and Lan bert[46] on 549 cases has been published. Kindwall[47] h outlined the treatment plan. Patients with CoHb of 25 or more should be treated regardless of the symptom more so if the patient is unconscious. If the patient symptomatic even near zero CoHb, he should be treate under HBO. Two ATA is preferred pressure and usual in two hours the CoHb comes down to 10% or less. repeat may be indicated depending on the symptom The unconscious patient should be intubated. Steroi may be used afterwards to combat cerebral edema po sibly with other measures. Fluid and electrolyte imba ance should be corrected. Acidosis, which usual accompanies the hypoxia, should not be correcte pharmacologically since acidosis aids in delivery of O_2 t the tissues by shifting the O_2 Hb dissociation curve bac to the right. Early correction of the acidosis may result i later alkalosis. Arrhythmias and other medical problen should be treated pharmacologically.

In the delayed neuropathology due to Co, Kato et al. in Japan stated, "OHP treatment was effective not only acute stage but also at later stage without hypoxemia an prolonged coma state. Mechanism of such effe remains to be investigated." In Norris[25] paper it is state "that barbiturates may slow down or stop progression the delayed encephalopathy by decreasing the cells ox gen consumption." A report in *Medical World Ne* describes work by Evelyn using infusions of thiopent with good results and a beginning study by Rosenthal Stanford University. Both investigators suggest barbit rates may protect against slowly advancing damage t cells following anoxic insult. Hypothermia is anoth area of treatment being investigated in the treatment central nervous system hypoxia. Observations of ne drowning victims suggest that survival rates amon patients who are profoundly hypothermic on admi sions were greater than normal thermic patients. Anim studies of barbiturates and hypothermia in the trea ment of hypoxic insults to the central nervous syste also exist. Klawans et al.[38] found that Co-Parkinsonis responded to anticholinergics, but not to levodop since it is a pallidal lesion and the nigrostriatal dopam nergic function may not be a major factor in C Parkinsonism.

Case History

A 58-year-old white male who was in good health unt November 25, 1981, was found unconscious in a burnin home in the Fresno area. He was admitted to the hospit in a deep coma with hypoxia and metabolic acidosis. H received 100% O_2 via mechanical ventilator for fou ys. By the fourth day, his mental status improved, he s speaking, following commands and asking ques- ns, but he was still weak and lethargic. Five days later e patient deteriorated to coma thought secondary to xic metabolic encephalopathy, secondary to cerebral poxemia. It was thought that the coma was irreversi- e since the case was complicated by ileus, acute renal lure and hypernatremia, but on the fourth day his ndition started to improve. CAT scan of the brain was gative. EEG showed diffuse bilateral slowing. The tient came to our Center on December 5, 1981 and s found lethargic, responding to questions with blink- g of the lids. Neurologically: Cranial nerves II - XII thin normal limits except right facial droop and weak g. Motor function was weak in all the extremities. He uld not walk. There was mild generalized rigidity, but cogwheel phenoma, muscle stretch reflexes were +3. ere was no Babinski or cerebellar signs. There was nsiderable hypokinesia and bradykinesia. Sensation s within normal limits. His speech was slurred and able to verbalize. He was treated in a monoplace perbaric oxygen chamber at 2 ATA for one and one lf hours for 40 sessions without any problem. He proved significantly. The motor power has improved th shoulder strength 4/5 on the left and 3/5 on the ht. Elbows and forearms are 4/5, wrists 3-5/5, finger xors 4/5. Finger extensors 2-3/5, finger abduction 4/5, ger adductor 2-3/5. Hips and knees were 3/5 and kles 4/5. Reflexes in the upper extremities were +3 and ver extremities +2. Cerebellar exam showed de- eased heel-to-shin. Sensation was intact. He started to nd with some assistance and ambulated using a pick- walker for a distance of about 200 feet. E.M.G. shoed ripheral neuropathy of moderate severity involving nsory and motor components with myelin and axonal s of median and ulnar nerves. There was also creased recruitment which may be due to disuse or per motor neuron lesion. Visual evoked response was rmal. Brain stem auditory evoked response was not nclusive. Somatosensory evoked potential showed a of artefacts. In October, 1982, the patient was seen th neurological deterioration in the way of Parkinson- n. However, his mental faculties are retained, his eech ability remains somewhat garbled but intelligi- e. His gait remains very weak and shuffling. He was put medications for Parkinsonism.

onclusion

This is a case of delayed encephalopathy after Co- isoning. The patient benefited from HBO therapy but e started to deteriorate neurologically although not to e pretreatment level. The question is, how did HBO erapy help that delayed phenomenon, although the has been all discharged from his system? The possible swer is that some of the nerve tissues may have not en destroyed although he was anoxemic. This is the oup one may call parabiotic. It could be that this tissue s recovered its function partially or totally under HBO. rsistent edema around the damaged tissue and anoxic giopathy may be corrected to some extent under HBO therapy. Another question is, is it justifiable to use HBO in delayed anoxic neuropathology? One can not conclude from one case, naturally, but it may be worthwhile to try it if no contra-indication. Further studies should be conducted clinically and by animal experiments. It is, of course, well known that organic neural damage is not reversible and that HBO should be started as soon as possible after exposure.

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Oncology/
Hematology

Modification Of Humoral and Cellular Host Defense Systems By Malnutrition In Humans

Ronald Ross Watson, Ph.D.

Editors:
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One compelling hypothesis that might explain th increased morbidity and mortality suffered by malnou ished patients, is that nutritional deficiencies impa immune responsiveness, thus reducing anti-microbi protection. Detailed studies on the influence of infe tion on metabolism and nutritional status have demo strated the degree to which pre-existing malnutritio may be exacerbated by the anorexia and negative nitr gen balance which frequently accompany infection Even the relatively mild, subclinical infections produce by living vaccines can result in measurable decreases i the nutritional status of apparently healthy children There is a significant interaction among nutritional stat immune responsiveness and infectious disease. Y human malnutrition in different populations an patients is most often both quantitatively and qualit tively distinct. It may include deficiencies in protei calories, vitamins, and trace minerals, sometimes in variety of permuted combinations in the same popul tion or disease state.[1] This review emphasizes the effec of the major nutritional deficiency states, low and hig dietary protein or energy, on immunological resistanc

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Chronic studies in rats and monkeys have shown mild renal toxicity with papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with *Motrin* Tablets

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported If these develop, discontinue *Motrin* Tablets and the patient should have an ophthalmologic examination, including central visual fields and color vision testing

Fluid retention and edema have been associated with *Motrin* Tablets; use with caution in patients with a history of cardiac decompensation or hypertension In patients with renal impairment, reduced dosage may be necessary Prospective studies of *Motrin* Tablets safety in patients with chronic renal failure have not been done

Motrin Tablets can inhibit **platelet aggregation** and prolong bleeding time Use with caution in persons with intrinsic coagulation defects and on anticoagulant therapy

Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, skin rash, weight gain, or edema

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The antipyretic, anti-inflammatory activity of *Motrin* Tablets may mask inflammation and fever

As with other nonsteroidal anti-inflammatory drugs, borderline elevations of liver tests may occur in up to 15% of patients These abnormalities may progress, may remain essentially unchanged, or may be transient with continued therapy Meaningful elevations of SGPT or SGOT (AST) occurred in controlled clinical trials in less than 1% of patients Severe hepatic reactions, including jaundice and cases of fatal hepatitis, have been reported with ibuprofen as with other nonsteroidal anti-inflammatory drugs If liver disease develops or if systemic manifestations occur (e.g eosinophilia, rash, etc.), *Motrin* should be discontinued

Drug interactions. *Aspirin:* used concomitantly may decrease *Motrin* blood levels.

Coumarin: bleeding has been reported in patients taking *Motrin* and coumarin

Pregnancy and nursing mothers: *Motrin* should not be taken during pregnancy or by nursing mothers

Adverse Reactions: The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal of which one or more occurred in 4% to 16% of the patients.

Incidence Greater than 1% (but less than 3%)—Probable Causal Relationship

Gastrointestinal: Nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,* headache, nervousness; **Dermatologic:** Rash* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS)

Incidence less than 1%—Probable Causal Relationship**

Gastrointestinal: Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma; **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia; **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit; **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting; anaphylaxis, bronchospasm (see CONTRAINDICATIONS); **Renal:** Acute renal failure in patients with pre-existing significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria; **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis

Incidence less than 1%—Causal Relationship Unknown**

Gastrointestinal: Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmias (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schonlein vasculitis; **Renal:** Renal papillary necrosis.

*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

**Reactions are classified under "*Probable Causal Relationship (PCR)*" if there has been one positive rechallenge or if three or more cases occur which might be causally related Reactions are classified under "*Causal Relationship Unknown*" if sever or more events have been reported but the criteria for PCR have not been met

Overdosage: In cases of acute overdosage, the stomach should be emptied The drug is acidic and excreted in the urine so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis. Suggested dosage is 300, 400, or 600 mg t.i.d or q.i.d Do not exceed 2400 mg per day Mild to moderate pain: 400 mg every 4 to 6 hours as necessary

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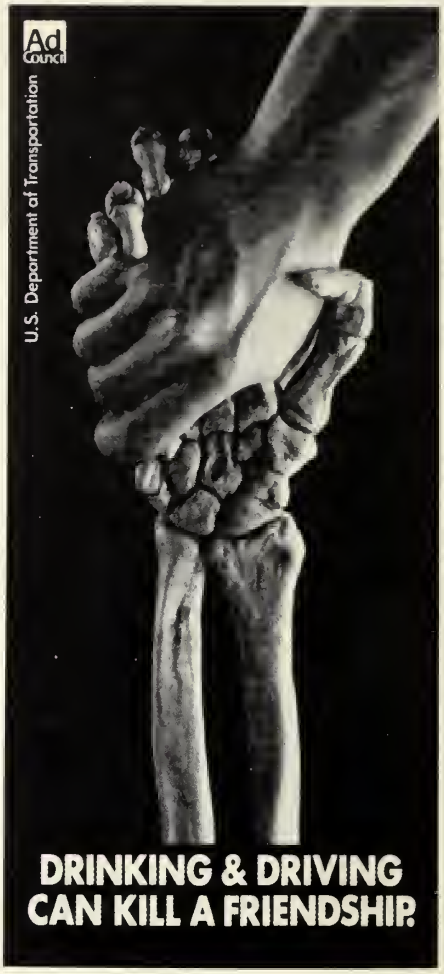
J-4791 August, 1984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echanisms. Indepth reviews of the effects of nutri- onal deficiencies on immunity have been recently ublished.[1,3-5] Therefore, the effects of malnutrition on ey host defense systems are briefly summarized as an d to understanding changes in resistance.

ellular Immunity in the Malnourished

A key cell mediating cellular immunity (CMI) is the nall T-lymphocyte. The T-lymphocyte is influenced uring maturation by the thymus. The absolute require- ent for a fully functional thymus in the development of ormal T-lymphocytes and effective CMI is dramatically ustrated by congenital thymic abnormalities such as e DiGeorge Syndrome. T-cells participate directly or directly in cell-mediated immune phenomena which clude delayed hypersensitivity reactions and resist- nce to intracellular microbial infections and neoplasias.

Long before the central role of the thymus in CMI was cognized, it was observed that one of the striking stopathological features of severe malnutrition was ymic atrophy.[6] There is decreased cellularity of areas the spleen and peripheral lymph nodes of malnour- hed children which are normally populated by ymus-dependent T-lymphocytes.[6] Thymic abnormali- es are connected with deficiencies in CMI. In post- ortem samples taken from African children with arasmus and kwashiorkor, the weights of the thymus, leen, Peyer's patches, and appendix were markedly duced, and exhibited paracortical depletion and the sence of germinal centers. Histopathological evi- nce of lymphocyte depletion correlated very well h reduced responsiveness to dinitro-chloro-benzene NCB) and less blastogenic transformation to PHA in verely malnourished patients from the same pulation.

In one of the most complete studies to date, Neumann d co-workers examined several immune responses in hanaian children with either severe or moderate mal- trition.[7] The children were examined for the presence deficiencies of iron and specific vitamins in addition protein and calories. Significant depression of CMI, th in vivo and *in vitro*, was noted in the severely alnourished children with either marasmus or kwa- iorkor. The presence of specific nutrient deficiencies s correlated with depressed CMI responses and ong associations were found between delayed hyper- nsitivity skin test reactivity to SK-SD and candidin and rum levels of total protein, albumin, carotene, and amin C.

Several authors have reported a relatively rapid recov- y of normal CMI upon nutritional rehabilitation.[1] ere is some indication, however, that impairment of MI responses may persist for several years if the nutri- onal stress is early and severe enough. Dutz and co- orkers[8] studied the delayed hypersensitivity response DNCB in severely malnourished orphans who had een infected during early infancy and found significant epression of CMI up to five years later, at a time when were free of intercurrent disease and were well urished.

The evidence to date suggests that severe protein or calorie malnutrition is associated with profound impairment of cell-mediated immune functions. Both the number and functional capability of T-lymphocytes are markedly reduced, as is the delayed hypersensitivity response to antigens and sensitizing chemicals. In general, the severity of immunological impairment parallels the severity of the nutritional deficiency. Preliminary, indirect, evidence supports the hypothesis that severe nutritional deficiencies interfere with lymphokine production by T-lymphocytes and may increase the number of T-lymphocytes having a suppressor function. Furthermore, the efficacy of vaccines which stimulate primarily a CMI response may be impaired in severely malnourished vaccines. Nutritional rehabilitation of severely protein malnourished children does not always return them to normal responsiveness to several CMI vaccines.[9]

Although there is nearly universal agreement that severe protein deficiency results in depressed CMI, several studies suggest that reduced total caloric intake may not have the same dramatic effect on T-lymphocyte function. Thus, different forms of severe malnutrition may be qualitatively distinct with respect to their impact on CMI.[1] In spite of the fact that the vast majority of malnourished children and hospitalized adults worldwide suffer from moderate rather than severe nutritional deficiencies, very few studies have focused on the impact of moderate or subclinical malnutrition on immune responses. Moderate malnutrition, characterized in humans and experimental animals by growth retardation in the absence of clinical signs of malnutrition, is definitely associated with significant changes in immunological responsiveness. For example, Ziegler and Ziegler[10] studied the delayed hypersensitivity response to PPD (mycobacterial antigen) following vaccination with BCG in Nepalese children. Nine to eleven weeks after BCG vaccination, the moderately malnourished children responded with significantly less delayed hypersensitivity following skin tests with PPD than well nourished children. The impairment of delayed hypersensitivity was not absolute since a sizable percentage (29%) of the malnourished children had indurations greater than 4 mm. Most parameters of CMI are impaired in moderately malnourished children, while many of the same parameters are normal or enhanced in moderately malnourished experimental animals.

Nutritional Stresses and Complement Production

The key role of complement activation is an amplification of other portions of the host defense system. Genetic defects which reduce the levels of some complement components such as C_3 are clearly associated with increased incidence and severity of bacterial infections. Indirect evidence has indicated for some time an association of severe protein malnutrition with a poorly functioning complement system. For example, some malnourished children have a defective inflammatory response. The opsonizing and bacterial activity of whole serum from some malnourished children is also reduced. Lower complement C_3 levels, like reduced skin test reactivity, can often be used as diagnostic evidence of malnutrition.

Smythe and co-workers in 1971 provided the first unequivocal evidence that serum complement levels were reduced by nutritional stress.[11] African children with protein-calorie malnutrition had an altered serum function for the total complement fixation reaction along with reduced hemolytic activity. Other studies with Colombian children have shown a consistent increase in C_3 levels during nutritional rehabilitation.[9]

The effects of hospitalization, with adequate medical attention and a high protein diet, on various complement components in severely protein malnourished children clearly show that reduced complement levels usually return to normal upon nutritional rehabilitation.[9] The levels of C_1 and C_3 components increase significantly above the control values during nutritional rehabilitation.[12] A recent study in germ-free rats[12] shows that the reduction in complement components during severe protein malnutrition is due to decreased synthesis rather than increased utilization secondary to increased presence of bacterial pathogens.

Effects of Undernutrition on Secretory Immunity

The skin provides a significant nonspecific host defense system for much of the body. In contrast, areas such as mucosal surfaces which are not covered by skin, lack this protection and must secrete host defense proteins. Mucosal surfaces are bathed in secretions which have a nonspecific host defense function by removing potential pathogens through their washing action. These secretions include tears, saliva, milk, genitourinary secretions, and intestinal secretions. Secretory defenses include enzymes, immunoglobulins in secretions, flow of secretions, etc.[1] The mucosal surfaces of children and animals with protein-calorie malnutrition are particularly susceptible to increased colonization or invasion by microorganisms. Moderate and severe protein undernutrition has been shown to suppress the secretion of lysozyme in tears of moderately malnourished children by about 50% compared with normal children.[13] The synthesis and secretion into tears of other locally produced proteins such as secretory immunoglobulin A (S-IgA), and amylase were also impaired. Reduced concentrations of S-IgA and, to a lesser extent, lysozyme are potentially important factors in the defense formation of mucosal surfaces. The lower levels of these proteins in secretions differed significantly from serum proteins such as total protein, IgG, aminopeptidase, and albumin whose levels in tears were not influenced by nutritional status. The mechanism of reduced IgA synthesis involves an impairment in local synthesis and/or secretion of these proteins.[7,12] In malnourished humans low levels of S-IgA seem to be a general phenomenon in contrast to normal levels of IgG or albumin found in nasopharyngeal secretions, tears, or saliva.[1] Marginal protein malnutrition in a nutritionally well defined animal model system confirmed these observ tions where S-IgA was significantly lower in the tears an vaginal secretion of marginally malnourished guine pigs fed an 8% protein diet. IgG, the predominant immu noglobulin in vaginal secretions, was not affected b nutritional stress. Impaired production and/or functio of secretory component may explain the reduced leve of IgA observed in the tears and saliva of moderate malnourished children. Secretory component ma influence IgA levels in secretions by affecting the pro duction or function of secretory component withou reducing the capacity for IgA synthesis. Thus, a greate proportion of IgA would be dumped into the serum an result in the increased serum levels observed. Indee numerous studies have shown that moderately ma nourished humans and experimental animals hav higher levels of serum IgA than well nourishe counterparts.[1]

Extremely little is known about the effects of nutr tional alteration of S-IgA and disease resistance.[1] Ma nourished Indian children with severe PC administered live attenuated polio virus vaccine an measles virus vaccine all became immunized and deve oped a serum antibody response. However, nasopha ryngeal S-IgA antibodies to the viral antigens were ver low and undetectable in some children.[14] The reduce anti-measles S-IgA response could be due to decrease transport of S-IgA antibodies into the secretions and/ a poorer response to the viral antigens by reduced pro duction of the IgA antibodies. The reduced levels anti-measles and anti-polio antibody in secretions malnourished children may result in reduced defense insufficient antibody is present to cause the neutraliza tion or removal of infectious viruses.

Conclusion

Application to Malnourished Cancer Patients

Clearly severe protein or calorie malnutrition i immunosuppressive. The extended group of Copelan Daly, and Dudrick has produced a number of studie that describe the nutrition status and the immune statu in cancer patients as well as tumor-bearing animals. W recently summarized some of the associations amon intravenous hyperalimentation regimens and patients nutritional status, immunocompetence, and response t therapy.[15] The immunosuppression observed in cance patients receiving various forms of oncological therap may be partly due to malnutrition and that immunocom petence can be regained in a large proportion of thes patients with intravenous hyperalimentation give before or in conjunction with therapy. The use of hyper alimentation in malnourished cancer patients has bee recommended since renutrition is one way to improv immunocompetence, since favorable response to ther apy is associated with maintenance of immunocompe tence, and since restoration of immune systems i advantageous in reducing infections. Intravenous hyp eralimentation can be accomplished in cancer patient with a minimal incidence of catheter-related sepsis. I has been pointed out that other studies involving paren

eral nutritional support of cancer patients undergoing
reatment have shown little or no significant improve-
ient due to renutrition. There is also evidence, sum-
iarized elsewhere, that high intakes of vitamins may
icrease resistance to initiation of some cancers[4,16] in
art by immunological enhancement of nutritionally
ormal people.[17] The effect of hyperalimentation with
iicronutrients on CMI in malnourished people is
oorly studied and unclear.[4]

Logical and the abundant types of studies reviewed
bove, clearly encourage avoiding, treating and pre-
enting negative nitrogen balance and tissue loss in
atients with high risk of infectious disease, such as
ancer patients.

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AM Radiology

Radiologic Evaluation of the Acoustic Neuroma

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Editor:
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Abstract

The radiologic evaluation of the acoustic neuroma has long depended on plain films and, more recently, on complex motion tomography. Despite the relative effectiveness of these modalities, a large number of lesions are missed. Usually, these are small tumors or purely intracanalicular lesions. Contrast enhanced, high resolution computed tomography has improved the evaluation of extracanalicular lesions in the cerebellopontine angle. The addition of metrizamide contrast and especially air to the basilar cisterns has greatly improved the early detection of purely intracanalicular lesions. The combination of contrast enhanced, high resolution CT and Air-CT cisternography appear to be the optimal set of exams in the evaluation of patients who have had appropriate otologic screening.

The acoustic neuroma, although histologically benign, can be malignant because of its location. The earliest possible diagnosis and removal of this tumor are critical, not only to limit compromise of facial and auditory nerve function, but also to prevent the even greater morbidity and mortality associated with extension of tumor into the posterior fossa. Radiologic procedures play a key role in the diagnosis of acoustic neuroma.

Plain films have been used for decades and the anteroposterior (AP) and Townes projections alone can provide a high detection rate (75%) of acoustic tumors.[1] Linear tomography was the next major advance, and complex motion tomography (polytomography) produced even further improvement. Polytomography is more sensitive than plain films in early detection of the internal auditory canal erosion produced by an acoustic

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tumor. With this technique, Valvassori[2] achieved a 78% to 80% accuracy in detecting surgically verified tumors. However, the 20% of acoustic tumors which produce no bony changes were still missed with complex motion tomography.

In the 1960's, positive contrast cisternography was introduced.[3-5] This technique used 9-12 cc of Pantopaque, introduced into the subarachnoid space by lumbar puncture, and manipulated into the posterior fossa cisterns under fluoroscopic guidance. Moderate and large tumors were generally well defined. Small tumors were occasionally obscured by the contrast medium. The risk of supratentorial spillage of Pantopaque, with possible sequelae of severe headache, nausea and vomiting, was always present.

Soon afterwards, Hitselberger and House[6] introduced the small volume (1-2 cc.) Pantopaque technique designed to look specifically at the internal auditory canal and porus acousticus. If the internal auditory canal filled with Pantopaque, an acoustic tumor could be confidently excluded. Until very recently, this examination was the gold standard for diagnosing and defining intracanalicular or small extracanalicular lesions.[2,7-8] However, some investigators reported up to 25% false positive rate with this technique.[7,9] A congenitally small internal auditory canal, arachnoiditis, a displaced brain stem or even an adjacent aneurysm can prevent filling of the internal auditory canal, and thus produce an abnormal exam. A large tumor in the cerebellopontine angle cistern often cannot be outlined with the small volume of Pantopaque. Another concern is the development of arachnoiditis, which may occur when Pantopaque is left in the subarachnoid space.[10] Finally, artifacts produced by residual Pantopaque in the subarachnoid cisterns interfere greatly with subsequent CT head scans. It has become apparent that Pantopaque is not the ideal contrast agent for this examination.

Vertebral angiography has played an important role in the radiologic evaluation of moderate sized and large cerebellopontine angle tumors, to specifically characterize the angioarchitecture of the lesion, to show its relationship to major posterior fossa vessels, and at times, to rule out an aneurysm or some other type of vascular malformation which may masquerade as a tumor. Although computed tomography has reduced the indications for angiography in the evaluation of posterior fossa tumors, it still remains a valuable study in selected patients. Among other diagnostic tests previously used, neither pneumoencephalography nor isotope brain scans presently play a role in diagnostic evaluation of cerebellopontine angle tumors.

The application of computed tomography (CT) to the evaluation of suspected acoustic tumors has been revolutionary. Because of limitations in spatial resolution and long image acquisition time, only moderate sized or large lesions could be detected with any reliability with early CT scanners.[11,12] Tumors with the same tissue density as normal brain could be identified only from changes secondary to displacement of the adjacent brain stem and fourth ventricle. However, it soo became apparent that acoustic tumors could generall be enhanced by scanning after intravenous contra administration (Figure 1). Because some tumo enhanced only minimally, and because CT streak art facts produced by the dense otic capsules often o scured detailed visualization of the cerebellopontin angle cisterns, even moderate sized tumors (1 cm diam eter) were frequently missed. With subsequent bett spatial resolution, smaller tumors began to be detecte with greater frequency. The presence of an acousti tumor could often be inferred by the CT demonstratio of enlargement and flaring of the internal auditory can (Figure 1C), even when the tumor itself could not b defined.

Recent advances in CT technology have led to thinn slice sections (1.5-2 mm), new computer algorithms f detailed bone or soft tissue evaluation, and region interest scanning for further improvement in spati resolution. Tumors with as little as 2-3 mm of extracan licular extension can now be detected with enhance CT scanning.[13] Subtle bony changes in the internal aud tory canal can be detected as easily with CT scanning with polytomography.[13] Pre-contrast studies are gene ally not necessary. At our institution screening of th posterior fossa with contiguous enhanced 5 mm thic

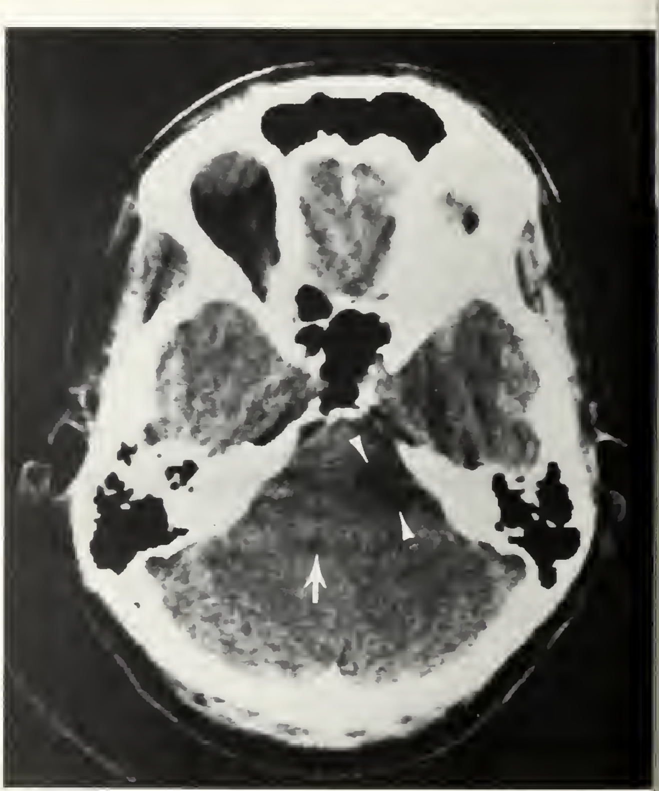


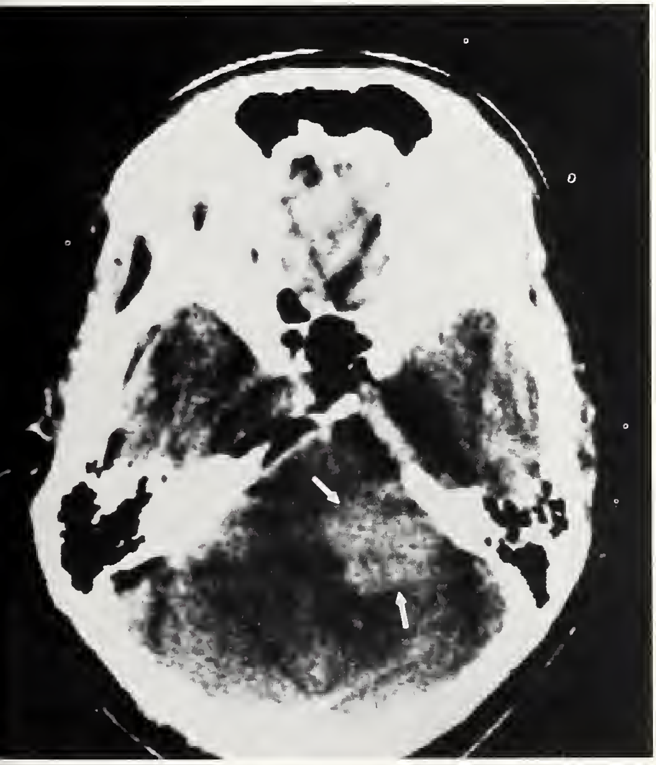
Figure 1
Forty-year-old woman with a three-year history of left side tinnitus and progressive hearing loss. Audiometric findin were consistent with a retrocochlear lesion.

A. 5 mm unenhanced scan shows subtle changes decreased density in the left cerebellopontine angle regio (arrowheads) and shift of the fourth ventricle (arrow) to th right.

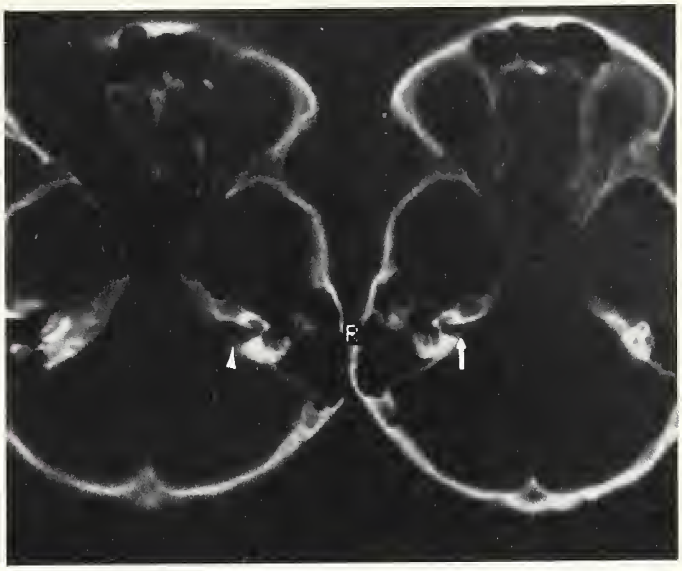
ial slices is done first. If these scans are negative or quivocal, additional 1-2 mm thick slices are obtained at e level of the porus acousticus. When necessary, corol scanning may also be added to the routine axial rojections to help further evaluate the internal audiry canals and petrous bones. However, it must be mphasized that consistent reliability with this techque requires close physician monitoring of the examiation and meticulous attention to patient positioning.

Despite these marked advances with high resolution anning, small extracanalicular of acoustic tumors may ll not always be visible, even though associated subtle one erosions are detectable. It is at this point that etrizamide CT cisternography may be needed.[8,14] hen administered via lumbar puncture in very low oncentrations, the subsequent opacification of the erebrospinal fluid by metrizamide is readily detected CT, and thus the extracanalicular extent of a small or oderate sized acoustic neuroma can be outlined presely. (Figure 2) Unfortunately, metrizamide CT cisterography still cannot reliably define a purely tracanalicular lesion.

Air can serve as an excellent contrast medium for efining the internal auditory canal and meatus at CT, ecause of the marked differences in x-ray attenuation etween air and bone. Using a small spinal needle, 4 cc 5 cc of air is introduced via lumbar puncture, with the atient in a semi-reclining decubitus position and the ternal auditory canal of clinical concern on the upde. Air, being lighter than CSF, will gravitate into the oper cerebellopontine angle cistern and around the porus acousticus. If no tumor is present, the air will pass into the internal auditory canal, generally accompanied by the patient noting a popping or crackling sensation on that side. The patient is then scanned in the lateral decubitus position. Following localization with a computer generated "scout view," the region of the internal auditory canal is evaluated with thin, overlapping slices (1.5 mm at 1 mm intervals), using high spatial resolution "bone" algorithms, and targeted reconstruction. With a normal canal, the neurovascular bundle is routinely identified, outlined by the subarachnoid gas. (Figure 3)



B. Following intravenous contrast infusion, there is nhancement of a very large, sharply defined tumor (arrows).



C. Bone window setting shows an enlarged left internal auditory canal (arrowhead) compared to the normal canal in the right (arrow).

The CT finding of an enhancing CP angle mass is nonspecific, and could be secondary to acoustic neuroma, meningioma, metastasis or primary brain tumor. However, the combination of tumor and canal erosion clinches the diagnosis.

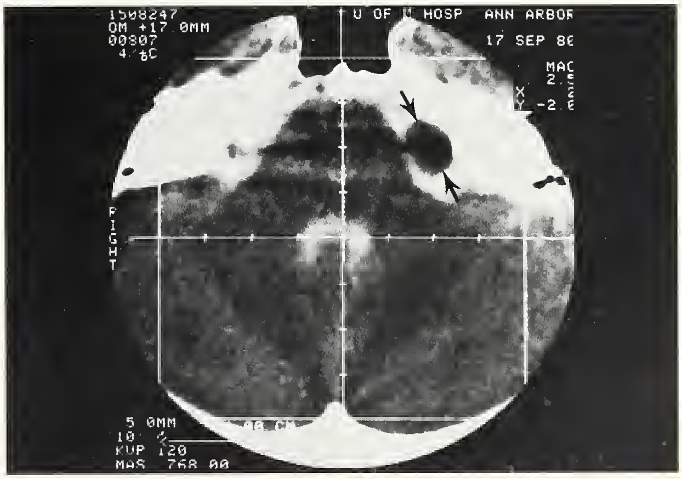


Figure 2

Sixty-year-old woman with left sided hearing loss. The enhanced CT scan showed an eroded internal auditory canal and a faintly enhancing mass in the left CP angle cistern. Subsequent metrizamide CT cisternography defines the mass clearly (arrows). The overlying grid is divided into 1 cm segments for measurement purposes.

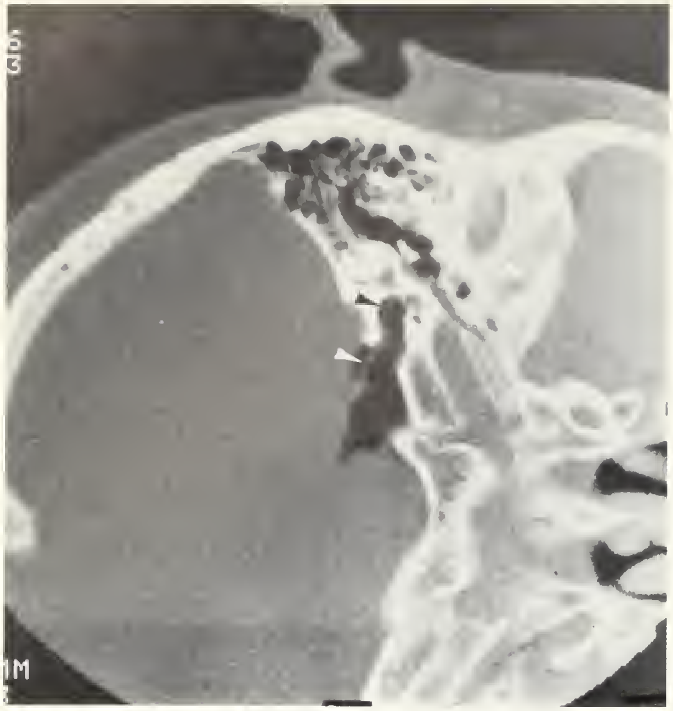


Figure 3
This 50-year-old man complained of right sided tinnitus. Slight ipsilateral retrocochlear hearing loss was noted. An air CT cisternogram was normal. Note on the left lateral decubitus view, the cisternal segment (white arrowhead) and intracanalicular segment (black arrowhead) of the right eighth nerve outlined by subarachnoid air, which appears black on the scan.

Both internal auditory canals can be evaluated in this way with excellent results.[13,15-16] Non-filling of the internal auditory canal with air is considered abnormal and is usually due to an intracanalicular tumor. Any small extracanalicular extension of tumor or even the medial margin of a purely intracanalicular tumor can be outlined by the air (Figure 4). However, arachnoiditis can obstruct the internal auditory canal and produce a false positive air CT cisternogram.[17]

Air CT cisternography (or canalography) is now considered the "gold standard" for evaluation of suspected small acoustic tumors. The morbidity of the procedure is quite low, and is usually limited to mild headaches in the retro-orbital or retro-auricular area. The study can be performed on an outpatient basis, Pinto et al.[16] have shown a marked decrease in headache by using filtered CO_2 instead of air. They attribute the improvement to the rapid absorption of CO_2 from the subarachnoid spaces. Despite this, prolonged headaches may occur, possibly as a result of the spinal puncture itself.

Conclusion

The development of sophisticated CT scanning has radically altered the radiologic evaluation of acoustic tumors. If such a tumor is suspected clinically, the first procedure should be an otologic consultation. With audiometric examinations, including brain stem evoked potentials, the otologist generally can predict the possibility of a retrocochlear lesion with a high degree of confidence.

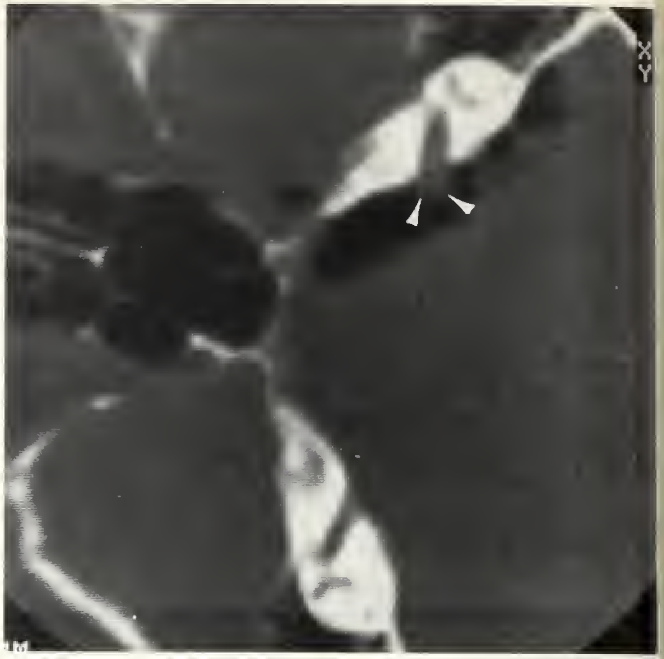


Figure 4
An air CT cisternogram was performed on this 42-year-ol woman with left sided hearing loss, tinnitus, and vertigo, following a long diagnostic workup that had included polytomography, enhanced CT scanning and metrizamide C cisternography. A small (8 mm diameter) soft tissue mass (arrowheads) extending out of a slightly enlarged left internal auditory canal into the CP angle cistern is outlined by air.

Contrast enhanced CT scanning will not only defin both large and small cerebellopontine angle tumors, bu will show secondary effects, such as bone erosion, displacement of the brain stem and hydrocephalus. If tumor is not seen on the enhanced CT scan, but the internal auditory canal on the side of symptoms i enlarged, an air CT cisternogram should follow, to rule out an intracanalicular tumor. If no tumor is seen on the enhanced CT scan and the internal auditory cana appears normal, the radiologic workup can generally be terminated, unless the otologic examination is highl suggestive of a retrocochlear lesion. In this situation, ai CT cisternography should still be performed, since occasionally small, purely intracanalicular acoustic neuromas can be detected prior to any bone erosion. Using the above schema, the sensitivity and specificity of the diagnosis of acoustic neuroma will be maximized.

Acknowledgements

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Special Article

ttitudes Toward Medical arketing In Maricopa ounty

ictoria J. Wilson, B.S.

bstract

This paper addresses the current controversy over edical marketing and advertising. Attitudes toward ese issues were surveyed and evaluated as a foundaon for formulating marketing plans for private practice. ttitudes were surveyed by means of mailed questionaires, sent to a random selection of physicians and onsumers in the Maricopa County area.

The results of the survey indicated that physicians harbor a negative attitude toward both marketing and advertising when related to health care, yet a small percentage of physicians responding have used, are using or plan to use marketing and/or advertising for their practices. Consumers indicated a strong wish for increased exposure to health care information in order to make educated consumer choices. Direct advertising techniques were rated "positive" by above sixty percent of responding consumers, but not by physicians. Most respondents believed however that physicians should not directly advertise. Other techniques found to be highly acceptable to both consumers and physicians are public lectures, patient handbooks, question/answer newspaper columns by doctors, patient surveys addressing quality of care received in physicians' offices, follow-up phone calls from the doctor, Saturday and/or evening office hours, and sponsoring community events.

Key Terms: Medical marketing; Medical advertising; Survey by questionnaire.

Introduction

Private medicine has existed in a state of dramatic scientific change for decades. Apart from science, however, private medicine has remained somewhat stagnant throughout these advances. As hospitals and other types of health care organizations have begun to utilize marketing techniques to nourish their growing businesses, physicians have refrained from this type of business approach toward their practices. The resultant decay in private medicine has only just begun to surface with the increasing pressures from Medicare and DRG's, growing competition for patients and the loosening of government involvement in medicine as evidenced by the ruling of the Federal Trade Commission that the American Medical Association could no longer prevent its doctor/members from truthful advertising.[1] With these many changing influences on medicine today, physicians are discovering that their practices are no longer self-sustaining. Practices which in the past required little or no effort to maintain now are steadily declining in activity and productivity. Patients are demanding more information in order to make educated choices for medical care. There is no longer the awe and unquestioning faith in physicians of previous decades, and the physician's role as unchallenged arbiter of health and medical issues is lessening.[2] Medical practices have been placed in the same dilemma as other businesses—the consumer must be attracted in order to increase business, and these consumers must be satisfied with services received to maintain the business. Physicians traditionally are not attuned to the intricacies of attracting and keeping patients, i.e., marketing. The reasons behind this lack of attention are varied.

For generations physicians have adhered to a code of ethics which considers marketing to be in poor taste. Physicians have always been expected to be above considerations of making money and increasing patient bases. As providers of an essential social service, their

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only concerns, under this code of ethics, should be providing good medical care to the patients who happen to come their way. The inference here seems to be that if the doctor is talented enough patients will appear without additional effort on his part. There is also evidence of professional ostracism of physicians who have dabbled in the marketing sphere. They are often looked upon by their peers as opportunistic non-professionals.

Marketing is often mistakenly viewed as synonymous for advertising. Marketing is a concept which encompasses a vast range of techniques most of which are not defined as advertising. Any action which brings the physician or practice to the attention of the consumer is marketing—even referrals and educational efforts of the practice.[3] There should be no negative connotation toward marketing in general—of course individual preferences naturally select from all techniques available and direct advertising can certainly be avoided if desired.

Unless private medicine begins to employ marketing strategies it will continue to decrease in productivity and the independent physicians may disappear completely from the marketplace. Competition for patients will increase with the number of new physicians entering practice and cost containment measures abounding lately will make revenues more difficult to generate. As with other types of business in a free enterprise system, medicine must learn to keep pace in order to survive the next decades.

Methods

The intent of this article is to identify particular marketing techniques which are considered acceptable and ethical by both the medical community and patients in general in the Maricopa County area. Working under the assumption that establishing "safe ground" for marketing medical practices would be a crucial first step in bringing private medical practice into the business world, it was determined that some form of survey would be the most advantageous approach in gathering the necessary information. Maricopa County was chosen as the testing ground due to its size and the greater probability of obtaining a representative sample of responses. Two survey forms were designed which were sent to physicians and health care consumers in Maricopa County. The surveys were designed with two sections, the first containing background questions about attitudes toward marketing and advertising in health care. These questions varied in the two surveys to more specifically address the issue with each group. The second part contained a list of marketing techniques currently in use across the country.[4] Identical lists were included in both physicians' and consumers' surveys to allow comparison of results. The lists included fifteen techniques which the respondent was asked to rate on a scale of one to five, one being "Good, very useful" and five being "Bad, not at all useful," as to the acceptability of their usage in medicine. Using a random selection process, the forms were sent to 100 physicians and 160 consumers in Maricopa County. Since this project w undertaken as part of a degree program, it was n funded by an outside source. This limited the volume surveys distributed.

The response was as follows:

Group	Total Mailed	Mail Returned	Total Responses	% of Total
Physicians	100	16	36	43%
Consumers	160	13	85	58%

As the surveys were received, they were broken int subgroups under each main group. The physician su veys were divided based upon the decade of graduatio from medical school, 1950s, 1960s or 1970s. The consu mer surveys were divided into age groups, under 25, 2 to 40 and over 40. Some intriguing comparisons can b made based upon these divisions.

Results

As seen in Table 1, consumers responded negatively t questions about using direct advertising in health car The majority disbelieved most messages given in adve tisements. The majority felt that the quality of curre health care advertising is only mediocre. The majori would not like to see doctors advertise and most consu mers indicated that they learn something of value fro advertising only sometimes or seldom. Yet nearly 100 said they would like to see advertising used to reach th public about new developments in health care. Base upon these results the clear preference of consumers that advertising not be incorporated into the health car field at this time.

The physicians responded, in Table 2, that none t very little marketing was introduced in medical school They definitely perceive a negative connotation towar marketing in health care and private medicine. Few do tors have used marketing in their practices and eve fewer have plans to do so. The majority of physiciar responding felt that there are other physicians in th Maricopa County area who utilize marketing to to great a degree. The attitudes among physicians are ve strongly anti-marketing.

The results of the rating scale section of the surveys, i Table 3, revealed seven marketing techniques whic rated above 70% positive; i.e., 70% or more of th responding physicians and consumers rated the tech niques No. 1 to No. 3 on the rating scale. The figure 70% was chosen because it is significantly higher than 51% majority and should single out only those tech niques perceived as highly positive by the respondent The seven over 70% are:

d. Public lectures by the doctor
e. Patient handbooks
f. Question/answer columns by the doctor
g. Patient surveys regarding office care received
h. Follow-up phone calls by the doctor to the patier
l. Saturday and/or evening office hours
o. Sponsoring community events

Two others rated above 70% with consumers but not th physicians:

c. Newsletters to patients from doctor
k. Scholarships to local graduating seniors from the ctor

Physicians' scores were consistently lower than consu- ers' in all techniques but public lectures and sponsor- g community events.

Separating out those techniques which can be classi- ed as direct advertising, further comparisons can be ade. The five techniques listed which qualify as adver- ing are:

a. Television or radio advertising
b. Newspaper, magazine advertising
c. Newsletter to patients
f. Question/answer columns by doctor
m. Sponsoring programs on public television

Table 4 shows percentages of positive responses, No. 1 No. 3 on the scale, to all categories above combined. can be seen, consumers rated direct advertising much gher than physicians. A gradual trend can also be seen ward greater acceptance of advertising among unger consumers and physicians.

One interesting comparison involves the marketing chnique of birthday greetings from the doctor to his tients. The only physicians responding positively to is technique were pediatricians. And the highest rat- g among consumers came from the under 25 age oup—perhaps a holdover from pediatric days. It is also teresting that consumers rated scholarships very high the rating scale while doctors rated them very low.

Both surveys asked for additional comments and the ysician response was substantial. Their plans for ture use of marketing, although limited to only a few rveys, indicated at least a marginal intention among e medical community to begin to use marketing. The ported plans included brochures, handbooks, flyers, llow pages advertising, lectures and newsletters.

Those physicians already experimenting with market- g listed the following methods which proved success- l: health fairs, Saturday office hours, pleasant office ttings, speaking to consumer groups, advertising in e form of flyers and letters, patient handbooks and the reful selection of staff to promote image. The largest sponse for a fill-in question was for: "What techniques other physicians in this area use which you find jectionable?" The most frequently mentioned tech- que, in six responses, was the use of the news media r "orchestrating" public relations efforts. The next ost frequent response was exaggerated claims to cure sease and/or grandiose descriptions of abilities and pertise. Other responses included: blatant advertis- g, use of free screening/testing to get patients through e doors, general mailings, flyers in public places, radio d television. Other general comments included:

- "Patient education has proven helpful, but only th the individual practice to educate existing patients, ot capture new patients."

- "Patients profess interest in Saturday morning hours, yet the incidence of no-shows is very high."

- "Advertising results in a loss of respect of peers in this community. Any economic benefits are outweighed by this lost respect—it's not worth it."

It is also interesting to note that ten physicians requested the results of the survey when completed. This indicates an interest in public opinion about marketing.

The consumers responded also with several valid suggestions. Four surveys discussed a need for better patient education. The suggestion was made that rising health care costs could be contained more effectively if patients were educated in preventative health care and if doctors would spend more treatment time dealing with the whole patient rather than "pill-pushing." The issue of treatment time was specifically mentioned twice—some consumers would like to see doctors spend more time giving patients individual attention. Advertising was addressed in four responses. Quality and good taste were the most frequently mentioned criteria for medical advertising.

Discussion

Although most consumers indicated a general disbelief in advertising messages, the overwhelming response was *for* greater exposure to new developments in health services, in the form of advertising and marketing. Most consumers disapproved of direct advertising by physicians, but would not be particularly upset if one of their doctors did advertise.

Eleven of the fifteen techniques were rated by consumers above 70% positive, which indicates a high degree of acceptance to most of the techniques listed. This shows that consumers would not be offended by the use of most techniques in the surveys. Even the second lowest rating, for television and radio advertising scored 56%, above the mean.

The response of the physician survey indicates that physicians definitely believe marketing and advertising both have a negative connotation in health care. Most had no exposure to marketing, have not used it in the past and do not plan to use it in the future. The majority opinion was also that there are doctors in the area who have used marketing too much. The conclusion drawn from this information is clearly that physicians' attitudes toward marketing and advertising have not altered considerably since the bans were lifted by the American Medical Association. As anticipated, physicians marked most of the techniques rather low. Only seven of the fifteen rated above 70% positive, and six more fell below the 50% level. Trends were noted in several of the individual techniques. These trends illustrate the slowly changing attitudes of physicians. For example, the following lists of techniques received 100% positive ratings in the 1950s and 1970s groups:

1950s	1960s	1970s
Public lectures	Public lectures	Patient handbooks
Question/answer columns	Sponsor community events	Follow-up phone calls
Sponsor community events	Follow-up phone calls	Saturday/p.m. hrs.
	Saturday/p.m. hrs.	

A trend is shown away from public service, 1950s focus, toward patient care and education, 1970s focus. Even though the 1960s group had no 100% responses, the four highest scores show a true transition between the decades. Two of the four match the 1950s and two match the 1970s.

The attitudes and opinions of medical patients as consumers must be heard by the medical community. Consumers are demanding more access to information and if physicians do not begin to recognize that fact, patient bases may deteriorate faster than new growth can replace them. If physicians continue to find actual direct advertising unprofessional, many other marketing techniques are identified in this article which could be used with a negligible amount of hostility from the public and/or other physicians. Public opinion has been made known, and all that is left is for the medical community to listen.

Recommendations

The research contained herein has indicated that the public is interested in greater access to information about health care and health services. Doctors' offic and clinics must meet that need if they are to rema successful. Official policy should be made part of a medical business plan to include community outrea projects and internally oriented techniques to bett serve the patient.

Techniques which have been identified as viable f use in medical marketing are:

- Free public lectures by the doctor
- Patient handbooks
- Question/answer columns by the doctor
- Patient surveys addressing quality of care
- Follow-up phone calls from the doctor
- Saturday and/or evening office hours
- Sponsoring community events
- Informational newsletters from the doctor
- Scholarships from the doctor to local graduatin seniors

A physician in Maricopa County should feel safe implementing any of the above techniques based up results of this research project. These techniques form solid base for creating a valid marketing plan for a medical practice in the area.

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TABLE 1

PATIENT RESPONSES

QUESTIONS #1 - #8

QUESTION	Age Group	-25	25-40	+40	Total	% of Total Responses
	Number of Responses	10	45	30	85	
1. When you see or hear an advertisement, do you generally believe the message given?	YES	3	15	13	31	36%
	NO	7	28	17	52	61%
3. Have you heard and/or seen the recent advertising for health care services?	YES	8	32	20	60	71%
	NO	2	13	10	25	29%
5. Do you feel advertising should be used to reach the public about new developments in health care?	YES	10	45	29	84	99%
	NO			1	1	1%
6. Would you like to see doctors advertise?	YES	3	23	12	38	45%
	NO	7	22	18	47	55%
8. Does your doctor's office staff provide you with good service?	YES	9	40	24	73	88%
	NO	1	4	5	10	12%
2. How often do you feel that you learn something of value from an advertisement?	Always	1			1	1%
	Often		4	6	10	12%
	Sometimes	8	31	16	55	65%
	Seldom	1	10	8	19	22%
	Never					
4. If you answered YES to Question #3, do you think the advertisements were well presented?	Well		8	8	16	23%
	Only average	7	25	11	43	63%
	Not well	1	7	1	9	14%
7. If one of your doctors advertised on television or in the newspaper, you would be:	Pleased	1	9	10	20	24%
	Unconcerned	7	25	7	39	46%
	Displeased	2	10	13	25	30%

TABLE 2: PHYSICIAN RESPONSES

QUESTIONS #1 - #9

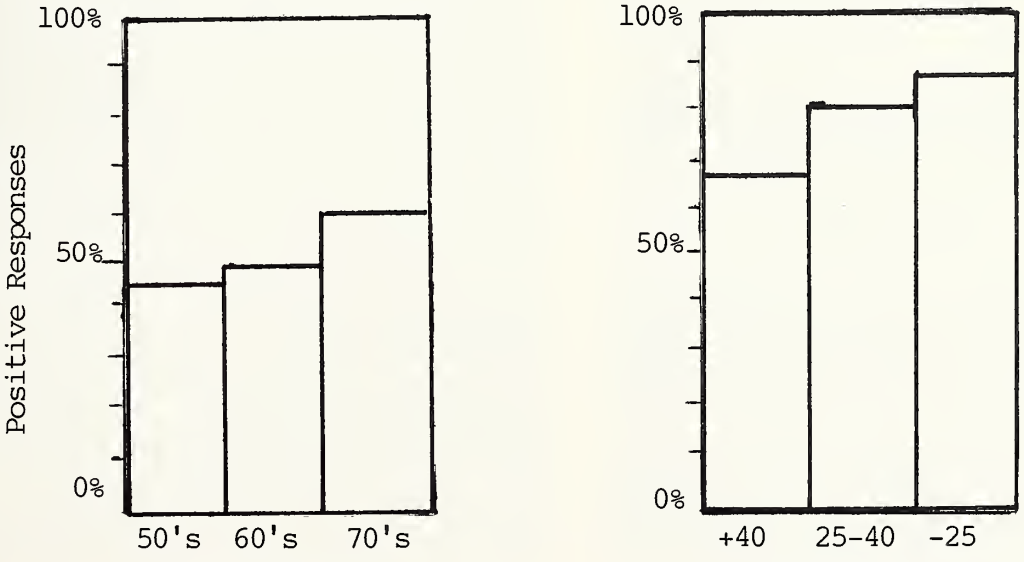
QUESTION	Decade of Graduation	1950s	1960s	1970s	Total	% of Tota Respons
	Number of Responses	10	16	10	36	
1. How much exposure were you given to marketing in medical school?	None	10	15	9	34	97%
	Little		1		1	3%
	Moderate					
	Lots					
2. Do you feel that marketing has a negative connotation when associated with health care in general?	YES	6	11	6	23	64%
	NO	4	5	4	13	36%
3. Do you feel that marketing has a negative connotation when associated with private medicine?	YES	7	12	6	25	70%
	NO	3	4	3	10	30%
4. Have you used marketing techniques in the development of your practice?	YES	3	4	3	10	30%
	NO	7	12	7	26	70%
5. If YES, do you feel they were successful?	YES	3	3	2	8	80%
	NO		1	1	2	20%
7. Are there other doctors in this area whom you feel use marketing too much?	YES	7	9	5	21	62%
	NO	1	6	4	11	38%
9. Do you currently have plans to advertise your practice in any way?	YES	1		3	4	11%
	NO	9	15	7	31	89%

TABLE 3: COMPARISON OF POSITIVE RATINGS

REPORTED IN PERCENTAGES

	85 Patients/Consumers				32 Physicians			
ERTISING/MARKETING TECHNIQUES	-25	25-40	+40	Total	50's	60's	70's	Total
Television, radio advertising	60	56	50	54%	11	27	29	22%
Newspaper, magazine advertising	80	78	53	69%	11	13	27	16%
Newsletters to patients from doctor	90	91	83	88%	50	60	86	63%
Public lectures by the doctor	100	93	80	91%	100	93	86	94%
Patient handbooks	100	100	90	96%	80	87	100	88%
Question/answer column by the doctor	100	100	87	95%	100	60	71	75%
Patient surveys regarding office care received	100	89	80	87%	60	80	86	75%
Follow-up phone calls by doctor checking patient	90	87	83	86%	70	93	100	88%
Birthday greetings from doctor to patients	80	42	30	42%	20	14	27	19%
Cash discounts for reaching specific goals	90	66	33	58%		14	14	9%
Scholarships to local graduating seniors from Dr.	90	77	60	73%	40	57		38%
Saturday and/or evening office hours	100	93	83	91%	80	93	100	88%
Sponsoring programs on public television stations	88	80	50	70%	30	57	71	50%
Open houses at doctor's office for patients/drs.	90	69	53	66%	60	60	71	63%
Sponsoring community events	90	87	80	73%	100	86	71	84%

TABLE 4: DIRECT ADVERTISING TECHNIQUES



Physicians

Consumers

Editor:

As you probably know, the Sun Cities Physician's Club is a civic minded group of 265 retired physicians who in the past represented expertise in all disciplines of medicine and who are still interested in today's medicine. We marvel at the outstanding scientific advances and compliment the physicians who interpret them.

However, medicine's progress has been achieved at a great financial cost and at a regrettable loss of good will, public relations and respect by patients.

Disturbed by many unfavorable comments by lay people and also physicians concerning their medical experiences in this community, the executive committee of the Sun Cities Physician's Club authorized a questionnaire to be sent to its membership to be answered anonymously.

Results of the Questionnaire:

Results of Questionnaire

1. Are you satisfied with local medicine in the following categories?			
a. Professional ability	Yes 91	No 16	Some 3
b. Fees	Yes 15	No 95	
c. General attitude toward patients	Yes 33	No 66	Some 8
2. Do they give adequate time and attention?	Yes 22	No 47	Some 6
3. Does professional courtesy to colleagues exist?	Yes 19	No 39	Some 26
4. Have you had an unpleasant experience with doctors?	Yes 33	No 53	
5. Do you think the "art of medicine—the common touch" still exists here?	Yes 19	No 66	Some 16
6. Are the physicians			
a. Easily reached?	Yes 32	No 61	Some 3
b. Well insulated & difficult to contact?	Yes 57	No 21	
7. Do you think their image and public relations are			
a. Good	5		
b. Average	47		
c. Poor	57		
8. In conclusion, and most important, do you feel that a sincere appraisal of the medical situation in this area should be issued officially by the physicians of Sun City?	Yes 94	No 16	

The answers reflect the negative input from patients, who confide their grievances to us, rather than the opinions of many retired physicians. The results of the poll, we believe, point to a rather poor public relationship for local medicine practice.

We realize that we practiced in an era now gone and we hope that nothing personal is inferred from this communication. It is to be understood that the opinions expressed are not applicable to all physicians.

We hope that your reception of this letter is with
resentment and taken in the same cooperative spirit th
it is sent.

Finally, we hope that your reaction to the questio-
naire will be one of thoughtful consideration. The pe-
ple in Sun Cities Physician's Club would be m
appreciative of a warm relationship with those of wh
they entrust their most important remaining resourc-
their health.

Sun Cities Physician's Club

Special Article

Women in Arizona Medicin

Mary Lawson Neff, M.D. — Part I

Virgil Hancock, III, M.D., M.P.H.

Abstract

Public health programs which are not sponsored
private funds require legislative approval for the nece-
sary appropriations. Because of this, politics, economi
and public health programs have been historica
related issues. This paper examines the relationsh
between costs and the delivery of public medical ser
ces in Arizona between 1915-1949. The public heal
movements which are focused on are eugenics a
mental hygiene. The early history of the Arizona Chil
ren's Colony, the public facility for mentally retard
children, provides a historical case study for the inter
lationship of these issues. Mary Lawson Neff, M.D., w
the first neurologist and the first woman psychiatrist
Arizona. She was a central figure in both the eugeni
and mental hygiene movements in Arizona and the fi
promoter of the legislation which led to the establis
ment of the Arizona Children's Colony.

From: 5346 Paseo de la Terraza, Tucson, Arizona 85715.

Currently, American medicine is under intense scruny from the public. Legislators, newspaper reporters nd the average citizen are becoming increasingly volved in medical issues. Control of rising medical xpenditures, in particular, is the major issue in medical olitics. The importance of economics and the provision f medical services is not a new phenomena in Arizona. uring the decade after statehood, 1912-1922, medical nd public health issues were a major focus of concern the young state. These issues did not occur in a cuum but rather reflected events and movements roughout the country. Unlike today, however, these ealth care concerns occurred during a period of expanon of the medical sector rather than in a period like the resent with its trend towards stabilization, remodeling nd, most likely, contraction.

The United States, during the Progressive Era, 1900-917, witnessed the rapid growth of prevention camaigns aimed at decreasing the morbidity of major iseases like tuberculosis, syphilis and mental illness. ollowing a brief review of several of these campaigns in rizona, I will focus on the public health movements of ugenics and mental hygiene as well as the primary rizona physician who promoted their programs: Mary wson Neff. Neff was the first woman neurologist and sychiatrist in Arizona and was probably the first Ariona psychiatrist to practice outside the state hospital, aking her Arizona's earliest community psychiatrist. n examination of her efforts to establish a training hool for the feebleminded (the Progressive Era term r the mentally retarded) in Arizona, enables a detailed impse into early political conflicts over the cost of edical services in the state legislature.[1]

Arizona is a state where health care issues have always een a central social, economic and political concern. uberculosis, for instance, was a major contributor to e early 20th century development of the southwest. e dry, warm climate attracted tubercular immigrants om every social strata on the east coast. The provision f facilities for tubercular patients was an economic plus r the state because they succeeded in attracting well- -do people from the east. While those from the upper nd middle classes brought with them money to pay for rivate health care, the "indigent migratory consumpve"—as the unemployed tubercular patient was beled—became the focus of some of the state's earliest ublic health care programs. Concerned with the contaious problems relating to this uncared for group, the gislature passed laws facilitating the development of ounty operated tubercular sanitariums.[2]

The development of public health programs for ubercular patients was encouraged by the establishent of private organizations. In 1909 the Arizona Anti-uberculosis Association, with a branch in every county eat, was organized. This organization, affiliated with the lational Tuberculosis Association in New York, lobbied e legislature for funds for sanitariums as well as for laws imed at preventing new cases of tuberculosis. Because rizona was such a haven for tubercular patients, federal monies sponsoring the construction of facilities for veterans with TB were responsible for the expansion of the federal sanitarium at Pastime Park, now the Veteran's Hospital in Tucson. This facility in Tucson was lobbied for in Washington, D.C. by citizens who were appointed by the city government to represent them. Taking advantage of their climate, Arizonans used the tubercular patient's demand for a dry climate to assist in the development and expansion of both private and public hospitals and sanitaria specializing in the care of tuberculosis.[3]

While venereal disease, smallpox and influenza did not provide an economic incentive for the state, the contagious nature of these diseases encouraged the development of public policy and the provision of services. The national emphasis on the morbidity of venereal disease following World War I led Arizona's State Board of Health to name syphilis and gonorrhea "dangerous to the public health" in 1918. Based on legislation passed in 1912 on quarantine procedures for diseases labeled as public menaces, Arizona physicians were required to report cases and follow the individual until he or she was cured. Anybody arrested for offenses such as vagrancy, prostitution or disorderly conduct had to submit to an examination by a physician. In Maricopa County this encouraged the development of a community clinic focused on early detection of VD, TB and childhood diseases. The clinic was free to encourage visits from the poor. Smallpox also made itself known in public policy. In Tucson, the discovery of two cases of smallpox initiated a campaign by the city to survey households suspected of harboring cases of the disease. Vaccination centers were conducted by volunteer physicians from the Pima County Medical Society. Even the legislature was not immune. In 1919, an epidemic of influenza in Phoenix nearly resulted in the fourth legislature convening in another Arizona city.[4]

Mental diseases, on the other hand, rather than being either a promoter of development or a contagious disease which could potentially infect anybody, were often a sensational issue exploited by the newspapers. "Sentimental" stories were printed about "old-timers" committing suicide together or featured headlines like *Hunt for Gold is Cause of Insanity*. Any patient with a serious mental health problem had only one institution in the state which provided care: the Arizona State Hospital. Mentally retarded children were also committed to this hospital due to a lack of other facilities. They did not receive special care and they lived in the same wards as the other patients where they were vulnerable to abuse. This institution was notorious for being overcrowded, poorly funded by the state and known as a "political football," due to the political nature of staff appointments. It was not uncommon for the hospital to run out of money and require emergency legislation for more funds. During the 1920s, the superintendent wrote the Governor complaining that despite the fact that the hospital ran out of funds the previous year, the legislature had lopped over $100,000 off their new budget.

Even impartial investigators like the State Treasurer or State Examiner would report that rather than squandering funds, as some legislators might have hoped, the hospital staff was doing their utmost to maintain and administer an embarrassingly underfunded and overcrowded institution.[5]

The political nature of staff appointments meant tremendous instability with each new Arizona governor—the elections for this office were held every two years—bringing a change in the hospital staff. Superintendents rarely stayed more than two years and at least one very capable physician refused to join the staff after becoming aware of the situation. The patients, the vast majority of whom had diagnoses of general paresis, cerebral atherosclerosis, senile dementia, schizophrenia, manic-depression, epilepsy and mental retardation, made a very poor political lobbying group especially since many of them never left the hospital. In this primarily rural state, the political clout was in the hands of the mining, ranching and agricultural interests who were primarily interested in minimizing their taxes.[6]

In order to understand the policies which were soon to be advocated by the Arizona medical profession, it is important to briefly examine the turn-of-the-century medical and psychiatric theory on brain disorders. Dementia-praecox (schizophrenia), manic-depression, epilepsy and feeblemindedness were all believed to be primarily hereditary diseases. Since cure was virtually unknown, the only real treatment was prevention. Eugenics and Mental Hygiene were two separate Progressive Era movements which overlapped when it came to prevention solutions for these major brain disorders. Mental Hygiene was the major prevention campaign, led by psychiatrists and east coast leaders of American medicine and backed by the Rockefeller Foundation, which was aimed at preventing mental illness. Eugenics, as a public health campaign, focused its efforts on preventing those with diseases believed to be inherited from reproducing. The various eugenic programs included segregation or institutionalization, sterilization, marriage restriction, community supervision of the feebleminded and widespread IQ testing programs to assist in the finding of the feebleminded. The feebleminded were the primary target of eugenic campaigns because of the widespread belief that they were responsible for a large percentage of crime, prostitution, and therefore the spread of syphilis, pauperism and dependency. Addressing the "menace of the feebleminded," as the problem was known on the east coast, became a major medical and social concern in public health movements throughout the United States during the early 1900s. It was during this period that Mary Lawson Neff initiated in Arizona the legislation which would eventually result in the establishment of the Arizona Children's Colony: the institution which would care for feebleminded children.[7]

Mary Lawson Neff was an unusual woman. Born in Pennsylvania in 1862, she did not enter medical school until the age of 34 after living and traveling in India, China and Japan, along with marrying and raising t children. Her medical school career in Iowa was rema able for obtaining some of the highest marks on h graduating boards and spending time studying unc Carl Seashore, a nationally known psychologist. Af four years as a general practitioner in Iowa, she moved Arizona for the first time because of her daughte tuberculosis in 1905. Two years later she returned to t east coast where she began working in the New Y mental hospitals and became a staff member at Corn Medical College where she practiced neurology a psychiatry. In New York she had the opportunity study under two of the leaders of these fields: Char Dana and Adolf Meyer. Moving to Boston in 1911, s began work on occupational therapy for the institutio alized, chronically, mentally ill. This work ultimat attracted national attention, earning her an invitation G. Stanley Hall, who invited Freud to speak in his only S. visit, to address a psychology seminar at Clark Univ sity. Prior to returning to Arizona in 1915, she had c ducted a number of studies in psychometrics; publish five papers, including, in 1910, a translation of a paper Freud unavailable in English; addressed national conf ences of the AMA, the Women's Medical Associati the National Nursing Association as well as the Natio associations for social hygiene and education. She h met and worked with such leaders in the eugenics a mental hygiene movements as Walter E. Fernald and H. Goddard. Neff, who could boast of having some the most sophisticated training available in the Progr sive Era in psychiatry and neurology, played an imp tant role in introducing Arizonans to the public hea programs associated with east coast eugenics and men hygiene.[8]

Despite the fact that Arizona had just become a st in 1912, many Arizonans were still aware of the latest e coast trends, namely eugenics and mental hygie When D. W. Griffith's nationally acclaimed film eugenics *The Escape* was shown in Tucson in 1915 it dr large crowds and rave reviews from the film critic of t Arizona Daily Star. The film was shortly followed by t play upon which it was based which was also perform to record crowds. Newspaper reviews of the p emphasized the theme as "*worthy of serious though* Newspaper articles on eugenics ranged from covera of the Race Betterment Conference of 1915 to the re tionship between heredity and social problems—a cl sic eugenic theme—emphasized by individuals li Judge Hickson of the Chicago Psychopathic Court. Ne Arizona physicians, several of the superintendents of t state's institutions and educators often promot eugenic programs. By 1927, the Arizona branch of t American Eugenics Society included such distinguish individuals as Byron Cummings, the President of t University of Arizona and a world famous anthropo gist, as well as Orville Brown of Phoenix, one of Ariz na's most distinguished physicians. The importance eugenic education was still of enough significance form the thesis of a Master of Arts degree in Education

34 at the University of Arizona.[9]
Mental Hygiene—with its dual emphasis on heredity
d environment—also received occasional coverage in
izona newspapers. One article marveled at the heavy
age of newly opened mental clinics in New York City.
e public school system quickly picked up on the
portance of mental hygiene programs in their treat-
ent of the problem child. During the 1920s, Tucson had
isiting teacher, a teacher trained in social work, men-
hygiene and psychology, who was assigned to work
th behavior problem children. She was part of a
tional campaign sponsored by the National Commit-
e of Mental Hygiene and funded by the Common-
alth Foundation to address the problems of juvenile
linquency. Mental hygiene concepts were commonly
vered in lectures on child hygiene and welfare pres-
ted to the Parent Teachers Association and the Con-
ess of Mothers. Mary Neff was a promoter of mental
giene principles in Arizona's juvenile court system. In
e medical profession, mental hygiene issues were
en presented by guest psychiatrists such as Karl Men-
nger and Franklin Ebaugh to state meetings of south-
estern medical societies. Thus, despite the lack of a
rmal branch of the National Committee of Mental
giene in Arizona, mental hygiene made gradual
roads in the public school, criminal justice and medi-
l sectors of the youngest state.[10]

Mary Neff was a catalyst in promoting eugenics and
ental hygiene programs as well as legislation in Ariz-
a. When she returned to the state in 1915, she began
ganizing programs which reflected the national trends
these movements. At the Arizona State Fair in 1915,
e organized a "sociologic" exhibit which focused on
e heredity of the feebleminded and included charts
ovided by the Eugenics Record Office, the leading
genic research center in the United States. Her work
ew support from women's groups throughout the
te and the size of the exhibit was substantially
larged by their participation. She was also involved
th Arizona's first Better Baby Contests. These were
ntests in which babies would compete against each
her in a wide range of physical and behaviorial catego-
s in an attempt to discover the most perfect infant.
ey were conducted throughout the country during
e early 1900s and were aimed at increasing family
vareness of eugenic principles. Conducted by a private
omen's organization in Arizona for five years, Better
by Contests were taken over at the State Fair by the
ate Board of Health in 1921.[11]

Neff was an Arizona physician who was actively
volved in the public sector as a consultant, an educator
d a lobbyist for the Arizona Medical Association in the
ate legislature. Neff, who lived in Phoenix, was one of
e earliest psychiatric examiners for the Superior Court
d the Juvenile Court. She visited the state prison at the
overnor's request to examine inmates and was an
pert psychiatric witness in criminal trials. She lectured
roughout the state to women's groups, PTA's, the State
r Association, in the normal schools and at the University of Arizona on eugenics and mental hygiene. She was the only neurologist in the state and was often called to consult on cases. During World War I she was an examiner for the draft board and participated on the War-Work Committee of the American Medico-Psychological Association, (the future American Psychiatric Association) in which she was one of the handful of women members during the early 1900s. In 1917 Arizona had three members of this national organization. The other two were physicians at the state hospital. Following the war she was one of the state leaders in Americanization work—the movement aimed at promoting patriotism and socialization in the U. S. following the first World War.[12]

Her work as the Arizona State Medical Association's representative to the state legislature led to the passage of two bills pertaining to mental illness and the introduction of legislation to create an institution for the feebleminded. While this latter project ultimately became her major political goal in Arizona, her concern with patient rights was reflected in one bill which required that the examination of a patient to be involuntarily committed to the state hospital be conducted by two physicians instead of the previous requirement for only one. While never drafting a separate bill, Neff also advocated the establishment of a psychopathic hospital in the state. These short-term, prevention and early detection oriented, acute-care facilities were considered one of the most important treatment innovations of the mental hygiene era and can be viewed as an early prototypic model of the comprehensive Community Mental Health Care of the 1960s. Unfortunately, the establishment of this facility went unrealized because there was not the necessary political support for such an institution. The reason for this becomes apparent when one examines the legislative process in Arizona at that time.[13]

Note: Eugenic and mental hygiene legislation as well as the legislative battles to establish The Arizona Children's Colony will be examined in Part 2.

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Editorial

The Effect of New Reimbursement and Legislation Policies on the Adoption of Magnetic Resonance Imaging

The new inpatient diagnosis related roup (DRG) reimbursement system ntroduced by the federal government nd similar schemes now being deve-oped by private insurers are directed at educing overall health care costs. An nportant factor motivating this and ther recent regulation is a desire to con-ol the use of technology, which is com-only viewed as bearing a major esponsibility for the continued escala-on of health-related expenditures. hese changes, then, should impact con-derably upon how further technology nnovations are received.

The initial test of this hypothesis is mag-etic resonance imaging (MRI). MRI is ne latest of the extraordinary imaging nnovations of the last decade. As with omputed tomography (CT), MRI is ased on the computerized reconstruc-on of images. However, it has major dvantages in that: 1) It does not utilize onizing radiation to produce images. 2) onventional contrast material is not equired, obviating the risk of idiosyn-ratic reaction and acute renal failure. 3) here is no discomfort. 4) Proponents say nat MRI may provide unique, clinically seful information. The possibilities cited nclude the differentiation of benign om malignant tissues and the character-ation of metabolic disorders. The extent o which these last speculations prove ue will be the most important determi-ant of the ultimate success of MRI.

For the present, the decision to pur-hase the technology is affected by coun-erbalancing disincentives. The most nportant of these are ambiguities con-erning the technology itself and the regulatory and reimbursement milieu. The most important technological uncertainty relates to the type and strength of the magnet. There is still considerable controversy concerning what is optimal for purely imaging purposes. It is almost certain that powerful superconducting magnets will be required to perform magnetic resonance spectroscopy—the procedure which may yield metabolic and tissue characterization. Nonetheless, systems based on high field strength superconducting magnets are more expensive to purchase, house and operate than resistive, permanent, or less powerful superconducting magnets. In addition, the actual clinical utility of spectroscopy is thus far unknown. These ambiguities are compounded by uncertainty concerning how significantly new reimbursement policies, lost revenue from competing modalities such as CT, and regulations affecting the purchase and use of innovative technology will affect MRI utilization. This last consideration may be particularly important. A number of states, including Arizona, have recently drafted regulations or guidelines directed toward controlling the diffusion of new technology in general and MRI in particular. The results of the Arizona referenda in November, 1984, will be important in determining to what extent such regulations will be implemented here.

In summary, the traditional incentives for purchasing a new, developing technology—value to patients, status, competitive advantage, and the acquisition of "turf"—are now considerably offset by the financial risks and risk of early obsolescence. Whereas previously the costs of operating new technologies could be shifted to other patient charges or simply added to the bill on a fee-for-service basis, prospective payment systems (PPS) such as DRG's require that the cost of inpatient utilization of MRI be absorbed by the institution. Since a majority of MRI examinations are expected to be performed on outpatients, the effects of PPS can be exaggerated. Still PPS should be viewed as symptomatic of a broader movement, involving both government and the private sector, to control health care costs. Future legislation and reimbursement innovations may be expected to address outpatient care as well. Thus, to be successful, MRI or any expensive new technology will have to provide useful, unique clinical information for enough important indications to make it economically competitive in the complex health care marketplace. These issues are particularly important to the College of Medicine because we have a presence of and commitment to research in imaging technology; each new technology poses an investigative challenge. Because the College is committed to education in cost containment, curricular exposure to the issue of high technology will be provided. Because faculty and students are a part of Arizona's citizenry, they will remain socially responsive to the challenges presented by technological innovations in the '80s.

Bruce J. Hillman, M.D.
Associate Professor of Radiology
Louis J. Kettel, M.D.
Dean, College of Medicine

Correspondence

ditor:

armony or Discord?

Some Arizona Medical Association nembers are suspicious that the Board of edical Examiners is out to "get the doc-ors" by heavy handed edicts and de-isions. Conversely, some BOMEX nembers are convinced that ArMA's pur-ose is to protect the physicians' interest n dealing with patients, third party pay-rs, and the legislature. Such individuals ee ArMA as a trade union and BOMEX as management, sometimes cooperative, but usually adversarial. This article will explore the reasons for these concerns and explain why such are inappropriate.

Not so many years ago (but before my time) ArMA—BOMEX was a mutual back scratching association. They shared the same facilities and even some of the same personnel. Every physician was licensed by BOMEX. Every physician had to belong to ArMA as well as the county and national organization, at least if that physician wanted hospital privileges. BOMEX licensed physicians without much hassle, disciplined physicians for the worst offenses without much hassle, and rarely revoked a license. Most complaints from patients or other physicians were referred back to the county medical society; therefore, action against an unethical, incompetent, or impaired physician fell to the appropriate committee of the state or county medical society. Since membership was universal, meaningful sanctions could be taken to correct the behavior of the wayward physician. Peer pressure was applied, usually with positive results.

When medical society membership became no longer mandatory, the system broke down. The wayward physician who became subject to discipline could merely resign membership and escape all sanctions. BOMEX was relatively weak and ill equipped to handle all but the most severe infractions. In response to this situation, the state legislature strengthened BOMEX by requiring review of all complaints, all malpractice claims, and all modifications of hospital privileges. In addition, any physician suspected of incompetence or mental impairment must be reported to BOMEX. The result is that major ethical decisions and those involving propriety of care which had previously (and correctly, in my opinion) been in the hands of physicians chosen by one's peers, have been transferred to physicians and lay people chosen by the governor. One can see, therefore, that the transfer of this function from medical society to BOMEX is a direct result of decreased medical society membership and subsequent decreased effect of medical society disciplinary action.

Conflicts in the past few years have encompassed a number of areas: ArMA was concerned about BOMEX continuing medical education requirements. When the issues were thoroughly discussed by both groups however, it was apparent that there was little if any difference in philosophy. BOMEX could not understand ArMA's opposition to proposed legislation establishing an independent board for regulation of physician assistants (then under the aegis of a combined Board of Medical and Osteopathic Examiners). ArMA's legislative committee had some real concerns about the quality of care rendered by PAs, and who was to supervise them, and how they were to be regulated. Due to ArMA's efforts a regulatory bill was defeated. Differences between the groups were thoroughly aired and resolved so that a more suitable bill was passed in the next legislative session.

Licensure requirements for foreign medical graduates and the new FLEX exam have also brought conflict. In this area, too, the problem is not so much a disagreement of philosophies as a need by BOMEX to uphold certain statutes passed by our legislature. Dissatisfaction with such statutes requires lobbying efforts by ArMA and/or BOMEX to get them changed. A current major sore is the inactivation of ArMA's impaired physician committee due to statutory requirement that all such cases be reported to BOMEX. The confidentiality of ArMA's committee can no longer be maintained. Since this was a hallmark of the committee's activity, it has been temporarily inactivated. Good or bad? BOMEX activity is in the open. Results are over 90% positive. The rehabilitated physician is BOMEX's most enthusiastic supporter. Anyone doubting same need only attend a disciplinary hearing and listen to the gratitude expressed by the physician returned to mental and physical health and to productive practice due to BOMEX intervention. We don't know ArMA's success rate in the impaired physician committee's effort, since these activities were always confidential. I am unaware of any formal, statistical report of the committee's activities or results. It may be that some situations are best handled confidentially, but the success rate of the BOMEX program cannot be challenged. A conference to discuss this particular issue is to be held in October 1984. Hopefully, some accommodation can be reached to satisfy ArMA's needs.

Where's the discord? BOMEX exists to protect the citizens of the State of Arizona. It does so by establishing standards of professional conduct, disciplining those doctors whose practice is substandard, and attempting to rehabilitate those who are ill. The Board works hard, is paid little and from correspondence received, seems to be satisfying the medical community and our patients. ArMA's goal is to help the citizens of our state to obtain the best medical care possible and to represent the physicians in their efforts to achieve this goal. Those who think of ArMA as a union to protect the doctor interest are simply wrong. The efforts o the maternal-child health committee, th insurance review committee, the legislative committee, the professional committee, and the salt reduction committee ar but a few examples of ArMA's efforts t improve the health of our citizens. ArM and BOMEX share the same goals. One i a voluntary body, the other created an sustained by legislative fiat. Thei methods are different. Their influenc over our patients, fellow physicians, an legislators is different. But, let no on deny the common dedication of bot bodies to see that the citizens of Arizon receive the best possible health care.

Richard D. Zonis, M.D.

Briefly Noted

Jerry A. Biggs, M.D., Phoenix, has been selected as medical director of the West Valley Camelback Hospital which is scheduled to open in early 1985. Dr. Biggs is a past president of the Arizona Psychiatric Society.

Benjamin K. Harris, M.D., Phoenix, discussed "Arthritis: What's New in Treatments?" at the September *health Talk* cosponsored by the Arizona Medical Association and Blue Cross/Blue Shield of Arizona.

Mehernaz Noshir Irani, M.D., Casa Grande, has been nominated as an Outstanding Young Woman of America for 1984 in the Arizona division. Dr. Irani was cited for her work on the Board of Directors for Against Abuse, Inc. of Pinal County.

Martin L. Johnson, M.D., Phoenix, is a participant in the Phoenix Union High School District program which provides selected students with six-week internships in physicians' offices to give them first-hand information about medicine as a career.

Nicholas Toronto, Jr., M.D., Mesa, has been appointed medical advisor to the Phoenix Airport Acquistion Hardship Steering Committee. The committee acts upon requests from property owners in the proposed airport expansion area who need to move their business or residences prior to the acquisition schedule.

Lloyd F. Novick, M.D.
Preventive Medicine - Director,
Arizona Department of Health Services
1740 West Adams, Phoenix
New York University - 1965

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The Arizona Medical Association welcomes the following new members.

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On Your Behalf

The following physicians were members of the Arizona Medical Association "Yes" on 301 Speakers' Bureau. Sincere thanks for their tireless efforts to inform the public and the media about the five health care propositions appearing on the November 6 ballot.

Earl J. Baker, M.D.
Marshall B. Block, M.D.
Richard L. Collins, M.D.
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The Weight of Medical Knowledge

Bertha R. Almagro

The tectonic plates are slowly splitting under the weight of medical knowledge!

This phrase is meant to reflect the extraordinary increase of literature generated by medical scientists, but it particularly refers to the increase in the thickness of medical books. This characteristic can be closely associated with the trend to publish multi-authored books.

One inevitable weakness of this type of publication is the difference in style; others deal with potential omissions, duplication of material, and lack of consistency in the different chapters as well as between the use of terms. Identification of the intended readership seems to be another difficulty faced by multi-authored books since the depth and breadth of the contributions, as well as the credentials of each author, create an uneven tapestry of chapters. The absence of solid editorial leadership is mostly to be blamed for these pitfalls. The baton of a benevolent dictator could work wonders in orchestrating the rhythm of the text, and so could the shears of a pruner trimming away all overlapping passages.

Besides the problems already highlighted, these volumes are doomed for early decay since spines easily break due to their extreme thickness. Photocopying contributes to this process, as volumes must be firmly pressed to obtain better quality of reproduction. Leaves will become loose and fall out making repairs necessary or even worse, a replacement copy might have to be purchased if the condition deteriorates to the point that repairs are not sufficient to make the volume available for circulation.

To illustrate some of the situations mentioned above, I have selected a group of titles that, although not necessarily representative of those flawed by uneven quality, repetitiousness, etc., are good examples of the trend in increased coauthorship, excessive thickness, and high prices. These titles, along with weight, number of pages, and number of contributors per volume, are included in an appendix.

The reader's attention must also be directed to the possible health hazards that these publications represent. Sprained wrists, dislocated shoulders, and even hernias can result from lifting these heavy volumes from the shelves or from carrying them around. Think of the legal implications of a case of "textbook elbow" or "handbook carrier's wrist." Should the author, the publisher, or the library be held responsible, or maybe all three?

What solutions, if any, can be considered to neutralize the ill effects of the multi-authored syndrome? One could be to demand from publishers that books should not weigh more than a certain number of pounds. Imposing a moratorium on the number of authors that can contribute towards one single volume is another solution, as is requiring that works with more than a specified number of pages be published in two or more volumes. The "multi-authored book syndrome" can be compared, to a certain extent, to the startling inflation in the number of authors per paper published in medical journals. This phenomenon has been quantitated by counting the number of authors on original articles printed in the *New England Journal of Medicine* for a selected period. The percentage of articles written by a single author fell from 98.5 to 4.0. Derek J. de Solla Price in his much quoted work "Little Science, Big Science,"[1] commented on the striking increase in the number of authors per article in journals and elsewhere. This statement is corroborated and brought up-to-date by a recent two and one-half page article (one page consisted of illustrations) published in the *New York State Journal of Medicine*, which is coauthored by no less than 19 contributors. Will the scientific/medical community place limitations in the number of contributors per paper? Will the multi-authored book face extinction based on uneven quality, blurred readership identification, and high prices? Will the readers demand changes in the pattern of publications? Even though numerous guidelines for authorship have recently been proposed, multidisciplinary input and expertise have also become essential for the management of complex situations, therefore a larger number of collaborators become necessary.

Perhaps some of these issues will be resolved by the new technology. Electronic publishing is a reality, and is changing patterns long established by the printed word. Books and journals are now available through a number of databases accessed via terminals, thus information has become weightless. No more hauling around of mammoth tomes, just a few quick strokes on the terminal keyboard, and voila! On the other hand, we will be introduced to a host of brand new "computer-generated" maladies such as "terminal cramps," "keyboard fingers," "CRT rash," "down-system ulcers," "screen optical distress," "computer breakdown neurosis," and many more. I have even heard that there is a new song called "Video Blues" that is quickly rising to the top of the popularity chart!

Reference

1. Price DJD: *Little Science, Big Science,* Columbia University Press, 1963.

APPENDIX

Title	Pages	Weight	Contributors
Cancer medicine/ed. James F. Holland, Emil Frei, III, 2d ed. - Philadelphia: Lea & Febiger, 1982.	2465	9 lbs.	184
Cancer, principles & practice of oncology/ ed. Vincent T. DeVita, Jr., Samuel Hellman, Steven A. Rosenberg - Philadelphia: Lippincott, 1982.	1926	11 lbs.	104
Dermatology in general medicine/eds. Thomas B. Fitzpatrick, et al. 2d. New York: McGraw Hill, 1979.	1884	9½ lbs.	180
Family Medicine: Principles & practice/ed. Robert B. Taylor, et al. 2d ed., New York, Springer-Verlag, 1983.	2020	11 lbs.	164
Heart, arteries & veins/editor-in-chief, J. Willis Hurst; eds., R. Bruce Logue, et al. 5th ed. New York: McGraw-Hill, 1982.	1953	7 lbs.	154
Infectious diseases: A modern treatise of infectious processes/ed. Paul D. Hoeprich., Philadelphia H & R 2d., 1983.	1464	7½ lbs.	122
Medical-surgical nursing: a psychophysiologic approach/ed. Joan Luckmann, Karen Creason Sorensen, 2d ed. Philadelphia: Saunders, 1980.	2276	8½ lbs.	42
Metabolic basis of inherited disease/ed. John B. Stanbury, et al. 5th ed., New York: McGraw-Hill, 1983.	2032	7 lbs.	137
Nelson textbook of pediatrics/ed. Richard E. Behrman, Victor C. Vaughn, III: Senior ed., Waldo E. Nelson - 12th ed., Philadelphia, W.B. Saunders, 1983.	1899	8 lbs.	123
Public health & preventive medicine/ed. John M. Last: editor emeritus, Philip E. Sartwell: Assoc. eds. James Chin, Irving J. Selikoff. 11th ed., New York: Appleton-Century-Crofts, 1980.	1926	7 lbs.	122
Textbook of surgery: The biological basis of modern surgical practice - 12 ed./ed. David C. Sabiston, Jr., Philadelphia: Saunders, 1981.	2481	10 lbs.	216

In Memoriam

Robert A. Tidwell, M.D.

Arizona and the country have lost one of their distinguished pediatricians with the death of Dr. Robert A. Tidwell. Upon his "retirement" to Sun City at the age of 67 in 1980, he became Medical Director of the "Clinica Adelante" for migrant workers and their families in El Mirage and practiced pediatrics there 40 hours a week plus being "on call" until his death. His interest in migrants antedated his arrival in Arizona since he had been Medical Director of the Title I Migrant Educatio Health Screening Program for the State Washington and Consultant in the are for Pennsylvania and Arkansas, an member of the Interstate Migrant Educa tion Commission of the States.

Dr. Tidwell was educated in Oklahom and the Children's Hospital of Michiga He had a busy practice in Seattle fro 1941 to 1980. He was Clinical Professor Pediatrics at the University of Washingto School of Medicine and from 1954 to 197 was Director of Cardiology at the Chil ren's Orthopedic Hospital. He was ounder of the Washington State Heart ssociation. He had a special interest in heumatic fever and was Medical Direc- or of the Rheumatic Fever Control Pro- ram in Washington for 16 years. He was Chief of the Pediatric Service and later of he Newborn Service at the Swedish Hos- ital Medical Center.

His pediatric organizational activities ere numerous. He served the American cademy of Pediatrics in many areas, ncluding State Chairman, District Chair- nan, Chairman of the Scientific Program Committee and earlier of the Cardiology ection. He was Medical Director of the AP, EPSDT, HEW-MSA Study and Coor- inated the AAP EPSDT Head Start Pro- ram after serving the State and District, including a trip to Guam and the Trust Territories. He was a Past President of the Washington State and the North Pacific Pediatric Societies. His activities outside of pediatrics included membership on the Seattle School Board for ten years, being Chairman in 1967 and 1972. He was Chairman of the Governor's Medical Advisory Committee in Washington for 12 years, and a consultant to the State Board of Health. He was Chairman of the Citizen's Zoo Committee.

Not the least remarkable thing about him was that the majority of the accomplishments noted occurred in the twenty years after his first severe attack of coronary artery disease.

Dr. Tidwell received many awards in recognition of his services. Among these were the Grulee Award of the AAP and the Damon Runyon Award for Services to Children.

The writer had the privilege of knowing Dr. Tidwell increasingly well over a period of twenty years. This amazingly strong, busy and effective man was kind, gracious, soft-spoken, and a treasured friend. His charming wife Betty, was constantly with him in his many travels.

Hugh C. Thompson, M.D.
Professor, Department of Pediatrics
University of Arizona

ArMA Reports

he minutes in this section have been ondensed. A complete copy will be ent to any member requesting them.

PUBLIC RELATIONS COMMITTEE

A meeting of the Public Relations Com- mittee of the Arizona Medical Associa- ion, Inc., was held at the Association's eadquarters, 810 West Bethany Home Road, Phoenix, on Saturday, September , 1984.

Dr. Clymer welcomed new members nd said the purpose of the meeting was o review ArMA's efforts to ensure the assage of Proposition 301 and the defeat f the other four health care proposi- ions, as well as review ongoing P. R. Committee activities. Following a report y Dr. Baker and Nikki Mertz of ArMA's urrent Physician/Patient/Public Educa- ion Program, suggestions were made by he committee for additional efforts that rMA staff might undertake given the onstraints of personnel and time. It was ecommended:

1. That the aid of the ArMA Auxiliary e enlisted in the campaign to inform oters about the five health care proposi- ions appearing on the November 6 allot.
2. That brochures be placed in libraries round the state.
3. That brochures be placed in phar- macies and that ArMA contact the district ffices of such major chains as Longs, Revco and Walgreens for permission to istribute brochures in this manner.
4. That the League of Women Voters e contacted to enlist their endorsement f the ArMA position.
5. That all outgoing mail be stamped with a special stamp which says, "Vote 'Yes' on Proposition 301."
6. That ArMA request physicians to have their office personnel call patients on election day and remind them to vote for Proposition 301.
7. That ArMA physicians seek speaking engagements with clubs and organizations around the state via the various Chambers of Commerce to educate the public about the ArMA position regarding the health care propositions. Committee members felt it was not necessary for physicians to be trained for these speaking engagements.
8. That the Executive Director of the Nursing Association be contacted again to enlist the aid of Arizona nurses in this effort.
9. That physicians be encouraged to telephone colleagues, friends, and neighbors regarding the importance of their votes in favor of Proposition 301 and in opposition of the other four propositions.
10. That ArMA utilize commercial television and radio spots statewide to educate the public. Channels 3 and 5 in Phoenix are said to be especially desirable since they "feed" cable TV statewide.

In other actions, ArMA's Editorial Board visits, Media Awards Program, MEDI-FACTS, Child Passenger Restraint program, FYI, cable television and Arizona Sports Medicine were brought to the committee's attention.

Dr. Nieri suggested that feedback from physicians regarding their opinion of MEDI-FACTS be sought via a coupon or card. The committee also agreed that college journalism classes should be included in the Media Awards Program. Dr. Ellsworth's letter of May 14 was referred to Dr. Block for publication in the "Letters to the Editor" column of *Arizona Medicine*.

The letter from Len Davis regarding physicians riding a four-hour shift with patrolmen on New Year's Eve was referred to the Executive Committee.

AD HOC INDIGENT HEALTH CARE COMMITTEE

A meeting of the Ad Hoc Indigent Health Care Committee of the Arizona Medical Association, Inc., was held on Saturday, September 8, 1984, at 810 West Bethany Home Road, Phoenix.

Dr. Winograd welcomed Albert W. Bostrom, M.D., Medical Director, AHCCCS, to the meeting and said the purpose of the committee was to discuss an interchange of ideas.

Discussion followed on the report of Scott P. Smith, M.D., re: AHCCCS Quality Assurance Program. Dr. Bostrom commented that since the AAAHC contract had a September 30th deadline, there was no time for outside help with the audit. He said his office had been visiting Medical Directors all over the state and expected to visit at least 60 offices before September 30. They will put into the report that a Quality Assurance Report will be required (in writing) on a quarterly basis. It was agreed that before the next meeting it should be determined whether or not there was a reversal in the Quality Assurance Report (written); if there is underutilization of the plan; and how the Arizona Medical Association can help provide input. The Committee would like ante-partum statistics in the Quality Assurance Report and will discuss this at the next meeting.

The Committee expressed concern as to how the grievance procedure is going to be improved. A meeting with HFCA officials was suggested and ArMA staff will research the proper contact person.

Dr. Stein was instructed to meet with his subcommittee and flesh out the alternative proposals worked out in the subcommittee's original meeting. Members consist of: Stephen R. Stein, M.D., Chairman, Suzanne E. Dandoy, M.D., Thomas F. Griffin, M.D. and Robert H. Page, M.D.

It was also agreed to offer various specialty societies an opportunity to provide names of interested members, on an informal basis, for submission to SRI International for the Arizona Peer Panel. A letter should be sent out under the Chairman's name, stressing the importance of this matter, to the Presidents of all the Specialty Societies.

During the meeting, Dr. Baker appointed Albert W. Bostrum, M.D. as a regular member of the Committee. This appointment will go to the Board of Directors for approval.

The next meeting will be October 20, 1984 at 11:30 a.m.

ArMPAC BOARD OF DIRECTORS

A meeting of the Board of Directors of the Arizona Medical Political Action Committee was held on Wednesday, September 12, 1984, at the Casa Grande Ramada Inn.

The minutes of the meeting held on July 26, 1984 were approved as distributed.

Kevin Walker, ArMPAC Treasurer, presented the August 31, 1984 revenue and expense statements which indicated a general fund balance of $31,139.16 and an educational fund balance of $7,683.66.

The Board received for information the membership report which showed 676 members for 1984. Board members were reminded that the bylaws require that they must join the PAC.

The Board discussed at length the recent action of the federal government relative to Medicare payments to physicians. Under the new law to become effective on October 1, 1984, two classes of physicians are created. One class consists of those physicians who sign a "participation" agreement to bill Medicare directly and to receive an amount equal to 80% of Medicare's approved charge. Their charges to patients are held to a maximum of 20% of the approved figure. The second class of "nonparticipating" physicians are those who bill patients directly and whose fees will be frozen until October 1, 1985. Under the law, these physicians are subject to severe fines and penalties if their charges are increased.

Members of the Board expressed strong feelings against these new provisions and took the following action: It was moved and carried to recommend to the Executive Committee of the Arizona Medical Association that it consider adopting as policy the recommendation that physicians do not accept Medicare assignment.

The telemarketing test solicitation has increased membership by 124 and generated $11,635 to date. A complete analysis of the project will be available at the next meeting.

Based upon the recommendations of the ArMPAC Board, the AMPAC Board has approved the following Congressional contributions:

District 1
John McCain (R) $2,500
District 3
Bob Stump (R) $5,000
District 4
Eldon Rudd (R) $3,000
District 5
Jim Kolbe (R) $5,000

The following general election contributions were discussed and approved by the Board:

District 1
Senate—John U. Hays (R)
Senate—Don Aldridge (R)
Dave Carson (R)
District 2
Senate—John G. Orr (R)
House—Sam A. McConnell (R)
John Wettaw (R)
District 5
Senate—Jones Osborn (D)
District 6
Senate—Hugh Guinn (R)
House—Henry Evans (D)
Jim Hartdegen (R)
District 8
House—Jim Willson (D)
Joe Lane (R)
District 9
Senate—Jeff Hill (R)
District 10
Senate—Luis Gonzales (D)
District 11
Senate—Jaime Gutierrez (D)
District 12
House—Jim Green (R)
District 15
Senate—Hal Runyan (R)
House—Bob Denny (R)
Jim Ratliff
District 16
Senate—Wayne Stump (R)
District 17
Senate—Anne Lindeman (R)
House—Sterling Ridge (R)
Pat Wright (R)
District 19
Senate—Bill Davis (R)
District 23
Senate—Alfredo Gutierraz (D)
District 24
Senate—Pete Corpstein (R)
House—Gary Giordano (R)
District 25
Senate—Jacque Steiner (R)

GOVERNING COUNCIL HOSPITAL MEDICAL STAFF SECTION

A meeting of the Governing Council of the Hospital Medical Section of the Arizona Medical Association, Inc., was held on Saturday, September 15, 1984, at the Association's offices.

Dr. Ward explained to the committee that, at the request of the Maricopa County Medical Society, which felt the matter would best be addressed at a state rather than county level, Dr. Neil G. Ba
nett had been asked to address the cor
mittee about certain concerns of tl
medical staff at Boswell Memorial Hosp
tal regarding the activities of the new sta
PRO, Health Services Advisory Group. D
Barnett pointed out that, among oth
things, when developing the regulatio
under which it would function, HSA
excluded any input from Sun City phys
cians who provide care to the majority
Medicare patients in Arizona and dete
mined to put such regulations into effe
on September 1st, at least one mont
prior to that stipulated in their feder
contract, resulting in poor implement
tion due to lack of staff, etc. The medic
staff at Boswell was seeking assistanc
through the state association in reques
ing HSAG to re-evaluate their curre
policies and regulations with physician-
specifically those involved in care
Medicare patients-input and consult
tion. After a lengthy review and add
tional concerns being voiced by membe
of the Council, it was determined to pu
the matter before the general meeting
the Hospital Medical Staff Section sche
duled for later this same date.

The Council received, for informatio
a summary from the American Medic
Association relating to its contemplate
action against provisions contained in P
98-369, the Deficit Reduction Act of 198
as well as a September 13th FEDNET bul
letin regarding an open letter in the sub
ject from Joseph F. Boyle, M.D., Presiden
of AMA. It was determined that, since
presentation was already scheduled o
the program agenda for the HMSS meet
ing by a representative from Aetna, a con
sensus by the section regardin
endorsement of the AMA action woul
be called for.

Dr. Ward reminded the members tha
the next meeting with ArHA's Liaiso
Committee is scheduled for 10:00 a.m.
Saturday, September 29, 1984, at the Association headquarters.

HOSPITAL MEDICAL STAFF SECTION

A fall meeting and program of the Hospital Medical Staff Section of the Arizona Medical Association, Inc., was held at the Association's headquarters on Saturday, September 15, 1984.

The first presentation on the program was made by Sandy Spellman, the Director of Government Affairs of the Arizona Hospital Association, on Certificate of Need (CON), Rate-Setting and Capital Expenditures. Ms. Spellman gave a brief breakdown of what had occurred in the legislative session which, for the time being, had left CON in place, discussed what could occur depending on the outcome of the November 6th election relative to the health care propositions and responded to particular questions from the audience.

A slide presentation by Neil O. Ward,

D. outlining the background and rea-
ing for ArMA's position that physi-
ns and their patients should vote "yes"
Proposition 301 and "no" on Proposi-
ns 109, 110, 200 and 302, received tre-
ndous positive response from those in
endance and was followed by an in-
oth discussion by Bob Nelson, Presi-
nt of Nelson Padberg Associates, a
olic relations firm based in California,
lining numerous ways for physicians
enhance their image with patients, the
nmunity as a whole, and the media.
. Nelson listed, among other things,
destroying credibility by denying
re is any health care cost problem;
king one-on-one with patients about
various reasons for rising health care
ts and, at the same time, allowing
ients to vent frustrations about those
ts; becoming actively involved in
nmunity and civic groups; meeting
l talking with press and legislators,
ering constructive suggestions and
ernative price control programs; and
sonably, not angrily, responding to
orrect information. As far as the
coming election and the health care
opositions to be considered by the
ers, Mr. Nelson recommended hand-
s for physicians' offices, letters to
ients (not contained in bills) and per-
al conversations regarding the issues.

Ar. Allen Vaughan, Director of Finan-
Services of the Arizona Hospital Asso-
tion, addressed the members on the
ject of UB 82, the form requiring hos-
ls to report to the Arizona Depart-
nt of Health DRG costs, such
ormation being listed under the
ending physician's name, indicating
hospital charge for the specific DRG.
. Vaughan indicated that by reason of
iling, cost effectiveness would be pub-
knowledge and would enable compar-
ns of hospitals throughout the state to
made. A few moments were then
voted to questions from the members.

ollowing a brief presentation by Cha-
G. Bode, D.M.D., relative to the
ire of oral surgeons to seek and, if
alified, obtain active status on hospital
dical staffs. Dr. Ward, on behalf of the
verning Council, urged all representa-
es to encourage their hospitals to view
plications on an individual basis,
prove same based upon qualifications,
l limit privileges as the medical staff
ems appropriate (e. g., H&Ps on AS-1
y). Quality of patient care can be
hanced in a hospital setting (outpa-
nt) in cases where immediate backup
nsultation and the best resuscitative
uipment are available. Medical staffs
st recognize the competitive environ-
nt in which their hospitals operate
inst freestanding surgical facilities.
pefully, medical staffs will support that
npetition in the interest of reducing
t and perpetuating the existence of
ir hospitals in their communities.

Awaiting the last speaker on the program agenda, Dr. Ward brought the business portion of the meeting to order and the first item of discussion was the intent of the American Medical Association to file suit based in most part on the requirements of the Deficit Reduction Act of 1984 which would essentially favor participation by physicians. During a discussion on the matter, it appeared that significant numbers in the audience were nonparticipating and there was a strong indication that most doctors who will participate will be members of HMOs and other large groups. Believing that the Association should take some position relative to the AMA action, it was moved and carried to recommend to the ArMA Board of Directors that the Arizona Medical Association endorse the AMA's Legal efforts to protect Medicare beneficiaries' freedom of choice in selecting health care, to preserve equal Medicare reimbursement to senior citizens who choose a nonparticipating physician and to protect restriction on individual patients/physicians' rights to fully make contracts.

The next item of business was concerns which had recently been raised regarding the implementation of regulations by the Health Services Advisory Group, the Arizona PRO. Dr. Ward presented the group with background concerning the selection of HSAG and Dr. Neil Barnett, a member of the medical staff at Boswell Memorial Hospital spoke to certain issues which have been raised by that staff, i.e., lack of HSAG to seek input when developing its regulations from Sun City physicians who care for the greatest proportion of Medicare patients in Arizona and implementation of such regulations in a self-determined September 1st rather than the contract mandated October 1st, at which time HSAG was, and is, understaffed and incapable of operating efficiently. Following a lengthy discussion by the members, it was moved and carried to send a letter to the Health Services Advisory Group, expressing concern about the early implementation of the regulations and urging postponement of that implementation until HSAG is fully staffed and capable of efficient operation; suggesting that the goals as outlined are perhaps a bit unrealistic and offering assistance, via consultation with physicians in Sun City with its unique preponderance of Medicare patients as well as enlargement of the Board by physician members, with Jack S. Weiss, M.D. having indicated a willingness to accept such an appointment; and offering to monitor the program and provide a repository for information and/or reporting of problems which may develop in the months ahead.

Prior to hearing from the final speaker of the day, Dr. William Payne commended to the members the TV and radio commercials which were currently being presented by the Arizonans to Protect Quality Health Care regarding the November 6th health care propositions.

Mr. Tim Beckwith, Assistant Manager, Medicare Claim Administration, Aetna Life Insurance Company, presented the group with explanations of participating vs. nonparticipating physicians, establishment of patterns of fees and various other factors of the Deficit Reduction Act of 1984, stimulating a great deal of discussion among the attendees.

EXECUTIVE COMMITTEE

A meeting of the Executive Committee of the Arizona Medical Association, Inc., was held on Friday, September 21, 1984, at the Association's headquarters.

Following a brief welcome by Dr. Baker, Dr. Novick, Director of the Department of Health Services, expressed appreciation for being an invited guest which he hoped would allow him to relate more fully to practicing physicians. Dr. Novick spoke briefly on recent activities of the Department, i.e., development of a new behavorial health plan for the state; assumption of a greater role in environmental health and his intent to work closely with ArMA's committee; establishment of more prenatal centers throughout the state; a preventive health program which they would like to begin; and a greater interest in the matter of long term care. He also indicated that the Department is in the process of coming up with some public health objectives, beginning a monthly newsletter for physicians, and starting a monthly series of public health rounds at which everyone would be welcome. Mr. Robinson reminded the committee that Dr. Novick would be the guest speaker at the November 3rd luncheon with the U of A faculty, speaking on the subject, "Medical Practice, Medical Education and Government Future Trends in a Troubled Relationship."

Mr. Robinson advised that, due to the inability of a spokesman from Blue Cross/Blue Shield to be present, the discussion of their Office Surgical Incentive Program had been postponed until the committee's October 19th meeting, at which Drs. Denton, Linkner and Lovett had all indicated that they would be present.

The committee reviewed a request for financial support from the Governor's Advisory Council on Aging for the Annual Governor's Conference on Aging to be held October 3 and 4 in Phoenix. The importance of the conference was well accepted by the members; however, based upon past policy of the Association as well as budgetary restrictions, it was determined that financial support was not feasible at this time. During the discussion it was recommended that Charles E. Henderson, M.D., Jerome J. Kastrul, M.D., and Howard M. Kravetz, M.D. be asked to attend and participate, if possible, in the conference on behalf of the Association.

The committee received a report and comments on the 1984 Rural Health Conference; a letter of appreciation for ArMA's input regarding the Statewide Coordinating Council's Proposed "Controlling the Diffusion of Innovative Medical Technology in Arizona;" advice from staff that ArMA did not qualify for a fourth delegate under the recent 75% AMA membership category; and the Governor's acknowledgements of ArMA's nomination of Albert R. Andrews, M.D., John T. Clymer, M.D. and Steven S. Spencer, M.D. for appointment to the Board of Medical Examiners.

The request from the Florida Medical Association for financial support of the Reason '84 Constitutuional Initiative Campaign currently underway in that state was discussed by the committee and it was agreed that, by communication, the Association be informed that, although funds are not available to provide financial assistance, it supports the Campaign in principle and offers whatever expertise we might have which could prove helpful.

Various documents, including correspondence from the medical staff at Walter O. Boswell Memorial Hospital, Dr. Rudolf Kirschner, and the ArMPAC Board of Directors; AMA communications regarding the two lawsuits being filed by it; the Texas Medical Association's position on the Medicare Option and legal counsel's opinion regarding that position were discussed at great length. The Executive Committee commended the AMA for its forthright action regarding the lawsuits to protect physicians' freedoms and endorsed the recommendation taken by ArMA's Hospital Medical Staff Section in meeting on 9/15/84, "that the Arizona Medical Association endorse the AMA's legal efforts to protect Medicare beneficiaries' freedom of choice in selecting health care, to preserve equal Medicare reimbursement to senior citizens who choose a nonparticipating physician and to protest restriction on individual patients/physicians' rights to fully make contracts." Thereafter, it was moved and carried to adopt the position of the Texas Medical Association and prepare same for immediate distribution to accompany a MEDICAL MEMO which would be mailed to ALL Arizona Physicians and would contain the most recent information on AMA's September 21st filing of a preliminary injunction to stay the October 1 deadline for Physicians' Decisions to "Participate," an explanation of why ArMA is prohibited from making specific recommendations to its members, and the September 15th action pf ArMA's Hospital Medical Staff Section.

Dr. Ward showed his slide/tape presentation on Proposition 301 and the committee was apprised that eight duplicate sets had been made for speaker use. Mr. Robinson updated the committee on 301 mailings, participation by other organizations, interest generated within the medical community, and expenditures to date. The committee then reviewed the 9/8/84 recommendations by the Public Relations Committee regarding additional activities, which might be undertaken for this campaign, together with estimates prepared by Nikki Mertz on these contemplated activities, and it was moved and carried to accept the recommendations of the Public Relations Committee regarding additional activities which might be pursued in the "Yes on 301" Campaign for information.

It was agreed that, prior to the October meeting of this committee, Nelson Padberg and First Tuesday be solicited for their recommendations as to how physicians might be most effective in the final days before the election.

The Committee also received for information a memo regarding a telephone call form Robert E. Hastings, M.D. and correspondence from Efraim Pineres, M.D. relating to the health care porpositions.

Correspondence relating to AHCCCS concerns from Dr. Robert L. Anderton was received for information, it being agreed that Dr. Anderton be informed of ArMA's role relative to that program.

The committee reviewed a request that Diane Madden be dropped from the ArMPAC Board of Directors but deferred action until Dr. Henderson had the opportunity to discuss the matter with the appropriate individuals and report back.

It was moved and carried that salary adjustment for ArMA's lobbyist be kept within the 5% budget limitation applied to all other employees.

FINANCE COMMITTEE

A meeting of the Finance Committee of the Arizona Medical Association, Inc.,was held at the Pima County Society building, Tucson, on Tuesday, October 2, 1984.

The Finance Committee met for purpose of reviewing the long rar financial stability of the Association a reviewed the following documen Henry and Horne's (CPA) cash fl report of 5/24/84, article on AMA re ganization, ArMA dues structure for past 20 years, dues structure of ot states, steps taken during the past months to reduce cash flow and ot possible expense reductions.

Following extended discussion of v ious subjects with a view to providing additional funds or for actual savings current expenditures, the commit took the following actions:

It was moved and carried to reco mend to the Board of Directors that endowment fund (current probl response fund) be developed. Such fu to be financed by a voluntary assessm of the membership which would be do annually. The principal raised for the fu is to be invested and preserved with t interest earned to be used only wh unbudgeted situations arise and only w the approval of the Board of Director

It was moved and carried to reco mend to the Board of Directors that, if t current efforts to seek outside fundi are not successful, a resolution be subm ted to the House of Delegates whi would set a mandatory subscription pri of $40.00 per member over the regu dues structure. If the resolution is n adopted by the House of Delegates, th the Journal (Arizona Medicine) wou cease to be published.

It was moved and carried to advise t Board of Directors that the Finance Co mittee was very sympathetic to the effo of the Long Range Planning Committee reducing the size of the House of Del gates and the costs of conducting t Annual Meeting. The Finance Committ urges the Board of Directors to encou age further timely action in this directio

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Future Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoeni
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

accredited institutions and organizations above
luce a variety of continuing medical education
grams. Each accredited institution and
nization is responsible for designating which of
e programs meet ArMA's requirements for
egory 1 credit. Physicians who participate in
grams which are designated Category 1 by
edited institutions will receive Category 1 credit
ırd the ArMA Certificate in CME and the AMA's
sician's Recognition Award.

NOVEMBER

4 Regional Meetings, American
lege of Physicians
ember 16-17, Sheraton Hotel,
ttsdale, Arizona. Contact: William F.
ny, M.D., FACP, VA Hospital, South
h Avenue, Tucson Arizona 85723.

ona Chapter of American College of
geons—The Abdomen—A General
geon's Overview.
ember 16-17, Rancho de los
alleros, Wickenburg. Sponsored by
versity of Arizona College of Medicine.
ıtact: Office of Continuing Medical
cation and Outreach.

ical Seminar Series—Sexual
function and Impotence
ember 17, Holiday Inn, Mesa/Chandler,
ona. Sponsored by University of
ona College of Medicine. Contact:
ce of Continuing Medical Education
Outreach.

kinson's Disease Update
ember 17, University of Arizona
dent Union. Contact: Continuing
lical Sciences Center, Tucson, Arizona
24, (602) 626-6173, Lynne Mascarella.
ɔd for 8 hrs. Category 1 credit.

Ventricular System, Cerebrospinal
d and Hydrocephalus
ember 20, 4:15-5:30, Tuesday, Barrow
rological Institute, first floor conference
m, St. Joseph's Hospital and Medical
ter, 350 W. Thomas Road, Phoenix,
ona. Contact John R. Green, M.D.,
ctor. See upcoming dates for seminars
he History of the Neurosciences.

rth Assembly Meeting of the AMA-
pital Medical Staff Section
A-HMSS)
ember 29 through December 3, 1984,
on Hawaiian Village, Honolulu.
nsored by Department of Hospital
lical Staff Services, American Medical
ociation, 535 North Dearborn Street,
cago, Illinois, 60610. Contact: Gary L.
gatter, Executive Assistant, Division of
fessional Relations.

DECEMBER

ical Seminar Series International
licine
ember 8, Holiday Inn, Mesa/Chandler.
ıtact: Office of Continuing Medical
cation and Outreach, U of A College of
licine.

n Annual Radiology Seminar "Pulmonary
eases"
ember 14, 15, & 16, 1984, Camelback Inn,
ttsdale. Sponsored by Maricopa Medical
ter. Contact: Alex Newman, M.D.,
gram Director, Department of Radiology,
icopa Medical Center, P.O. Box 5099,
enix, AZ 85010. Approved for 22 hours
egory I credit.

CONTEMPORARY APPROACHES TO SEXUAL FUNCTION/DYSFUNCTION

January 24—27, 1985, Park City, Utah. Emphasis on etiology, diagnosis and treatment — Four day program allows for maximum learning with ample opportunity for skiing. CME & CE Credit. Contact: Conference Office, Box A-5 1120 Annex, University of Utah, Salt Lake City, Utah 84112 (801) 581-5809.

NINTH ANNUAL NEW MEXICO METABOLISM SYMPOSIUM

January 23—27, 1985, Tennis Ranch of Taos, New Mexico. Discussion will focus on data related to our understanding of some aspects of Type II Diabetes. Additionally, workshops are planned which will focus on current use of insulin(s). We feel the program will provide both practical and therapeutic insight in these areas of diabetes for the interested physician. All meetings will be held in the conference room of the Tennis Ranch of Taos. Registration fee for the meeting is $150 — reduced fee of $75 is available for residents, fellows in training, nurses and physician assistants. The meeting is accredited for twelve (12) hours of Category I AMA, Physician's Recognition Award. Housing accommodations will be available at the Tennis Ranch at Taos. Arrangements have been made with Taos Ski Valley to provide special rates for ski lessons and lift tickets. Contact: Office of Medical Education, Lovelace Medical Center, 5400 Gibson Blvd., SE, Albuquerque, New Mexico 87108. (505) 262-7353.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008.
Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of
St. Joseph's Hospital and Medical Center,
350 W. Thomas Rd., Phoenix, AZ 85013.
Sponsor: St. Joseph's Hospital & Medical Center.
Contact: John R. Green, M.D.
Approved for 1 hour Category 1 credit.

The Ventricular System, Cerebrospinal Fluid and Hydrocephalus
Tuesday, November 20, 4:15-5:30 p.m., first floor conference room, Hal W. Pittman, M.D., Chief, Section of Pediatric Neurosurgery

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

Barrow Neurological Institute wishes to announce the **Twelfth Annual Symposium** on Tumors of the Central Nervous System to be held on February 11-13 at the La Posada Resort Hotel. Topics will include various approaches to difficult tumor areas, medical treatment of central nervous system tumors, cellular genetics and malignant gliomas, spinal cord tumors, operative monitoring, magnetic resonance imaging, interstitial radiation therapy, immunotherapy, neuropathology and tumor cultures. For further information, write to Richard A. Thompson, M.D., 222 West Thomas Rd, Ste. 415, Phoenix, AZ, 85013 or call 277-2657.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, Ed.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classrooms I & II, May, July, Sept. & Nov.
Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.
Surgery of the Large Bowel
October 23, David Alberts, M.D. & Hugo Villar, M.D., University of Arizona Health Sciences Center. Approved for Category 1 credit hours. 12:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
Surgery of the Biliary Tract
November 27, Charles Witte, M.D., Approved for Category 1 credit hours. 12:00 noon in the Support Services Auditorium of Boswell Memorial Hospital.
Dermatologic Manifestations of Systemic Disease
November 14, Stephan Billstein, M.D., Roche Laboratories.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

Medicine Department Meeting
1st Friday, 12:15 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric G. Ramsey, M.D., Approve for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: Eric G. Ramsey, M.D.
Medical Conference
Daily, 12:30 p.m., Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: James Byers, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 850

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
1st & 3rd Monday, 12 Noon.
Medicine GI
2nd & 4th Monday, 12 Noon.
Medicine Dermatology
5th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortalit
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.

sthesiology—General
ekly, Tuesday, 2:45 p.m.
iew of GYN Pathology Slides
ekly, Tuesday, 4:00 p.m.
iatric Grand Rounds
Tuesday, 7:30 a.m.
hology Staff Inservice
ekly, Wednesday, 6:45-7:50 a.m.
sthesiology Residents & CRNA's
ference
ekly, Wednesday, 7:00 a.m.
Neonatal Conference
ekly, Wednesday, 7:30 a.m.
gery
ekly, Wednesday, 7:00 a.m.
gery Hand Conference
ekly, Wednesday, 7:30 a.m.
chiatry Staff
Wednesday, 11:00 a.m.
chiatry General Conference
3rd, & 4th Wednesdays, 12 Noon.
licine Cardiology
Wednesday, 12 Noon.
icine Hematology
Wednesday, 12 Noon.
tact: Neil Shernoff, M.D.
icine Mortality
Wednesday, 12 Noon.
icine Infectious Disease or Hematology
Wednesday, 12 Noon.
atrics Renal/Endo Conference
Wednesday, 12:30 p.m.
atrics Infectious Disease
Wednesday, 12:30 p.m.
sthesiology Staff Lecture
2nd & 4th Wednesday, 2:30 p.m.
gery Morbidity & Mortality Conference
2nd & 4th Wednesday, 3:30 p.m.
s/Surgery Joint Traum Conference
Wednesday, 3:30 p.m.
gery Urology Staff
Thursday, 7:30 a.m.
sthesiology Journal Club
Thursday, 8:00 a.m.
ulatory Pediatrics
kly, Thursday, 8:00 a.m.
gery Burn Chart Rounds
2nd, & 3rd Thursdays, 8:00 a.m.
Mortality Conference
Thursday, 8:00 a.m.
icine Problem Case Conference
Thursday, 12 Noon.
icine Rheumatology
Thursday, 12 Noon.
icine Staff & House (Separate)
Thursday, 12 Noon.
GYN Resident Conference
2nd & 3rd Thursday, 12 Noon.
cular Surgery Conference
2nd & 4th Thursday, 12:30 p.m.
bined GI & Surgery Conference
Thursday, 12:30 p.m.
sthesiology Chief Resident's Lecture
kly, Thursdays, 2:45 p.m.
opedic Surgery Basic Sciences
kly, Thursdays, 5:30 p.m.
Surgery Pathology
kly, Fridays, 7:30 a.m.
opedic Surgery Fracture X-Ray
ference
kly, Fridays, 7:30 a.m.
icine Endocrinology
Friday, 12 Noon.
icine Infectious Disease
Friday, 12 Noon.
icine/Radiology Conference
Friday, 12 Noon.
icine Cardiology
Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12:30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon,
5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon,
5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D.,
Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room
Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m.,
Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm.,
Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251.
Contact: Tom Disney, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.
Outpatient Detoxification Program
for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am. - 8:30 am.,
Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice
Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m.,
1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m.,
Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m.,
Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact:
J. Kipp Charlton, M.D.

ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.

Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m.,
1st Floor Conf. Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.

Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m.,
1st Floor Conf. Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.

Nephrology Conference
Weekly, Fridays, 12:30 p.m.,
Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711
Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.

Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium

A Talk on Allergies
Weekly, Tuesday, 12 Noon, Auditorium

Surgery Department Conference
4th Monday, 12 Noon, Auditorium

Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact:
Nick Mansour, M.D.

Ophthalmology Case
2nd Tuesday, 7:30 a.m.

Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium
Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A.,
Contact: Med. Staff Office.

Joint Liver Conference - Lab Conference Room
2nd Monday of each month - 12:00 noon.

Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.

Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m.,
Century Rm. A.

Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716.
Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon,
Contact: M. Maximov, M.D.

Dermatology Conference
4th Monday, 5:00 p.m.,
Contact: R. Miller, M.D.

Endocrinology Conference
4th Monday, 12 Noon,
Contact: M. Parker, M.D.

Nephrology Conference
2nd Monday, 12 Noon,
Contact: Stephen Seltzer.

Psychiatry Department Meeting
3rd Monday, 12 Noon,
Contact: Howard Winkler, M.D.

Perinatal Conference
2nd Tuesday, 7:00 a.m.

Surgical Conference
2nd Tuesday, 7:15 a.m.

Hematology Conference
4th Tuesday, 12 Noon,
Contact: Gerald Giordano, M.D.

Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon,
Contact: B. Friedman, M.D.

Orthopedic Conference
1st Tuesday, 7:30 p.m.,
Contact: Jay Katz, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesdays, 12:30 p.m.,
Contact: Dr. Lightner.

Neurophysiology Conference
2nd Tuesday, 5:00 p.m.,
Contact: Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m.,
Contact: Dr. Fuchs.

Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: M. Fuchs, M.D.

Neuorology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon,
Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m.,
Contact: N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon,
Contact: Cancer Committee.

GI Conference
Weekly, Friday, 12 Noon,
Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m.,
Contact: S.V. Hilts, M.D.

OB/GYN Conference
1st Friday, 7:30 a.m.,
Contact: Charles Parker, M.D.

OB/GYN Pathology Conference
3rd Friday, 7:30 a.m.,
Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Urology Conferences
Weekly, Tuesdays, Room 2413 - Uropathology
Weekly Tuesdays, Room D-335 — Consultation
Weekly, Fridays, Room 3134 — Uroradiology
These activities are a part of the CME program at the Veterans Administration Medical Center

Medical Service Grand Rounds
Weekly, Friday, 11:00 a.m. Rm. T-5,
Contact Dr. Zeller, Ext. 272

Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134
Contact: Dr. Kozarek, Ext 413
Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm. T5,
Contact: Dr. Byrne, Ext. 426.

Endocrine Conference
Weekly, Friday, 1:00 p.m., Rm. C435,
Contact Dr. Benene, Ext. 786

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134,
Contact: Dr. Russo, Ext. 362
and Dr. Mertz, Ext. 495.

Surgery — Pathology Conference
4th Monday, 4:00 p.m., Rm 3134,
Contact: Dr. Mertz & Dr. Lanard.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesdays, 12:00 noon, Rm.
C435, Contact: Dr. Sanowski, Ext. 321.

G.I. Grand Rounds
Weekly, Tuesday, 1:00 p.m., Rm. C435
Contact: Dr. Sanowski, Ext. 321

GI Pathology Conference
2nd and 4th Tuesdays, 12:00 noon,
Rm. 2413, Contact: Dr. Sanowski, Ext. 32

Renal Conference
Alternating Wednesdays, 1:00 p.m., Rm.
C435, Contact Dr. N. Sharma, Ext. 212

Urology Histopathology Conference
Weekly, Tuesdays, 8:00-9:00 a.m., Rm 24
Contact: Drs. Haddad & Kivirand, Ext. 41

Pulmonary X-ray Correlation Conference
Weekly, Wednesdays, 12:30-1:30 p.m.,
Room 4115, Contact: Dr. Rohwedder,
Ext. 388.

Cardiology Conference
2nd & 4th Thursday, 1:00 p.m., Rm. C435
Contact: Dr. C. Sharma, Ext. 435

Medical/Surgical Chest Conference
1st & 3rd Thursdays, 12:30 p.m., Rm. 411
Contact: Dr. Rohwedder.

Medical Mortality Conference
1st Friday, 11:00 a.m., Room T-5,
Contact: Dr. Zeller, Ext. 272

Medical-Surgical G.I. Conference
1st & 3rd Monday, 3:00 p.m., Rm. 3134
Contact: Dr. Sanowski Ext. 321 & Dr. Mer
Ext. 495

Medical-Surgical Chest Conference
1st & 3rd Thursday, 1:00, Rm. C435,
Contact Dr. Rohwedder, Ext. 388

Neurology Conference
Alternating Wednesdays, 1:00 p.m., Rm.
C435, Contact: Dr. Lawrence, Ext. 410.

Neuro-Psychiatry Conference
4th Thursday, 2:30 p.m., Rm. 4115, Conta
Dr. Arnold, Ext. 647

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm. 3134, Contac
Dr. Russo Ext. 362 & Dr. Mertz Ext. 495

Psychiatry Service Clinical Conference
3rd Wednesday, 8:30 a.m., Rm. D512,
Contact Dr. Arnold, Ext. 647.

Pulmonary Xray Correlation Conference
Weekly, Monday, 10:00 a.m., Rm C435,
Contact Dr. Rohwedder, Ext. 388.

Surgery-Pathology Conference
3rd Monday, 4:00 p.m., Rm. 2413, Contact
Dr. Mertz, Ext. 495 & Dr. Kerr, Ext. 511

Urology Conference
Weekly, Tuesday, 8:00 a.m., Room 3134,
Contact: Dr. Haddad, Ext 418.

Uropathology Conference
Weekly, Tuesday, 9:00 a.m., Rm. 2413
Contact: Drs. Haddad & Kivirand, Ext. 418

Uroradiology Conference
Weekly, Friday, 12:00, Rm. 3134, Contact
Dr. Haddad, Ext. 418

Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134,
Contact: Dr. Cintora, Ext. 417.

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escott, Arizona 86313. Contacts listed
ow. Approved for Category 1 credit.
dical Rounds
& 3rd Thursdays, 10:00 a.m.-2:30 p.m.
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Thursday, 10:00 a.m.-2:30 p.m.

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23. Contacts listed below. Approved for
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dical/Surgical Chest Conference
ekly, Tuesday, 2:00 p.m.,
ntact: Dr. Young.
dical Grand Rounds
ekly, Wed., 12:00-1:00 p.m., VA Hospital
ff Conf. Rm. & (AHSC),
ntact: Jay Smith, M.D.
rgical Grand Rounds
ekly, Wed., 4:00 p.m.,
ntact: Dr. Putnam.
docrinology Seminar
3rd, & 5th Thursday, 12:00-1:00 p.m.,
. N318, Contact: Department
nternal Medicine.
nd Rounds
ekly, Thursday, 11:00 a.m., Bldg. 107,
ntact: J. Fitzharris, D.O.
scular Radiology, Interesting Case Conf.
ekly, Thursday, 12:00 noon.
urology Grand Rounds
ekly, Friday, 12:00 p.m.,
ntact: Dr. Sibley.

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0 Avenue A., Yuma, Az 85364. Contact:
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diology Conference
Tuesday, 7:00 a.m.
eration Outreach
Tuesday, 6:30 p.m.
hology Conference
Tuesday, 7:00 a.m.
eration Outreach
Wednesday, 7:00 a.m.

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onsor: U of A College of Medicine,
cson, AZ 85724. Robert M. Anderson,
., Dir. of CME. Contact: See below.
proved for Category 1 credit.
esthesiology Board Review Conference
& 4th Monday, 4:00-5:00 p.m., AHSC
ing Rm. C&D, Contacts:
. Vaughn & Kryc.
esthesiology Basic/Clinical Sciences
ctures
ekly, Thursday, 4:00-5:00 p.m.,
om 5403.
esthesiology Case Discussion
ekly, Wednesday, 7:00 a.m., AHSC,
ing Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m., Contact: Dr. Ewy.

Cardiology Non-invasive Conference
Weekly, Friday, 3:30 p.m., Contact: Dr. Ewy.

Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn, Contact: Karen Garcia.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Contact: Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Department of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m.,
Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC,
Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon,
AHSC & VA Hospital
Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC,
Contact: Dr. J. Goldstone.

THE MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

• XXXII Annual Meeting • November 14-18, 1984 •
• Camino Real Hotel • Guadalajara, Jalisco, Mexico •

Partial Program

NOTE: Upon arrival, presentors should check the final program, as dates and times may vary from this partial program.

Wednesday, November 14

3:00 p.m. - 7:00 p.m.	**Registration**
8:00 p.m. - 9:00 p.m.	**Opening Ceremonies** Cocktail Party
9:00 p.m.	**Dinner**

Thursday, November 15

7:00 a.m. - 1:00 p.m.	**Registration**
8:00 a.m. - 9:00 a.m.	**Special Lecture** Methods and Techniques of Cardiac Transplantation *Jack G. Copeland, M.D., University of Arizona, Tucson, Arizona*
9:00 a.m. - 10:00 a.m.	**Special Lecture** Rejection Reaction in Cardiac Transplantation *Jack G. Copeland, M.D., University of Arizona, Tucson, Arizona*
10:00 a.m. - 11:00 a.m.	Methods and Techniques of Kidney Transplantation *Ben A. VanderWerf, M.D., Phoenix, Arizona*
11:00 a.m. - 11:30 a.m.	**Coffee Break**
11:30 a.m. - 12:30 p.m.	**Special Lecture** Methods and Techniques of Bone Marrow Transplantation *Gerald F. Giordano, M.D., Tucson, Arizona*
12:30 p.m. - 1:15 p.m.	**Panel Discussion** The Rejection Reaction and its Management *Ben A. VanderWerf, M.D., Phoenix, Arizona* *Gerald F. Giordano, M.D., Tucson, Arizona*
1:15 p.m.	**Luncheon and Sightseeing**
7:00 p.m.	**Fiesta Mexicana Especial** Cocktails, Dinner and Dancing

Friday, November 16

8:00 a.m. - 10:30 a.m.	**Symposium and Special Lectures by Mexican Physicians** (to be announced)
10:30 a.m. - 11:00 a.m.	**Coffee Break**

11:00 a.m. - 1:15 p.m. **Regular Program**

These fifteen minute presentations with five minutes for discussion will be precisely timed. A full complement of regular papers from Mexico will alternate with the U.S. papers in the final program.

Surgical Management of Hepatic Trauma
Carlos H. Corral, M.D., Phoenix, Arizona

Endoscopic Retrograde Sphincterotomy
Sylvain Sidi, M.D., Tucson, Arizona

Surgical Wound Covering Techniques
John A. Pierce, M.D., Tucson, Arizona

La Noche **Social Program**
(to be announced)

Saturday, November 17

8:00 a.m. - 8:30 a.m. **Special Lecture**
Treatment and Prevention of Viral Diseases
Robert N. Hyland, M.D., Tucson, Arizona

8:30 a.m. - 9:00 a.m. **Special Lecture**
Renal Calculi 1985
William W. Bohnert, M.D., Phoenix, Arizona

9:00 a.m. - 10:30 a.m. **Special Lectures by Mexican Physicians**

10:30 a.m. - 11:00 a.m. **Coffee Break**

11:00 a.m. - 1:15 p.m. **Regular Program**

These fifteen minute presentations with five minutes for discussion will be precisely timed. A full complement of regular papers from Mexico will alternate with the U.S. papers in the final program.

Surgical Strategy for the Intestinal Obstruction of Far Advanced Pargineal Carcinomatosis
Jack McCarthy, M.D., Albuquerque, New Mexico

Clinical Patterns in Pneumonia
Brendan D. Thomson, M.D., Phoenix, Arizona

Diagnosis and Management of Acute Gastrointestinal Hemorrhage
Jesus Cardenas, M.D., Tucson, Arizona, and Guadalajara, Jalisco

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The XXXII Annual Scientific Meeting of the Medical Society of the United States and Mexico is sponsored by the Arizona Medical Association, Inc. The Arizona Medical Association certifies that this activity meets the criteria for 15 credit hours in Category 1 for the ArMA Certificate in Continuing Medical Education and the AMA Physician's Recognition Award. In addition, application has been made for 15 hours of Category 1 credit by the American Academy of Family Physicians.

For additional information, contact: Kevin Walker, Executive Secretary, 810 West Bethany Home Road, Phoenix, Arizona 85013, (602) 246-8901.

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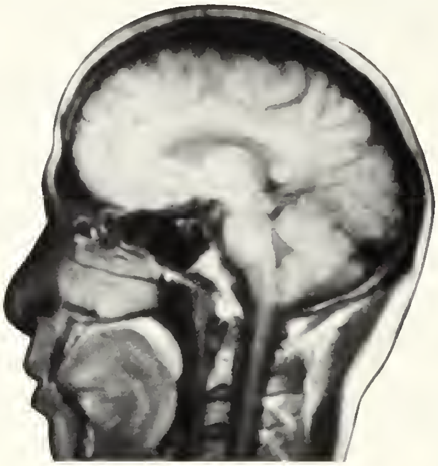

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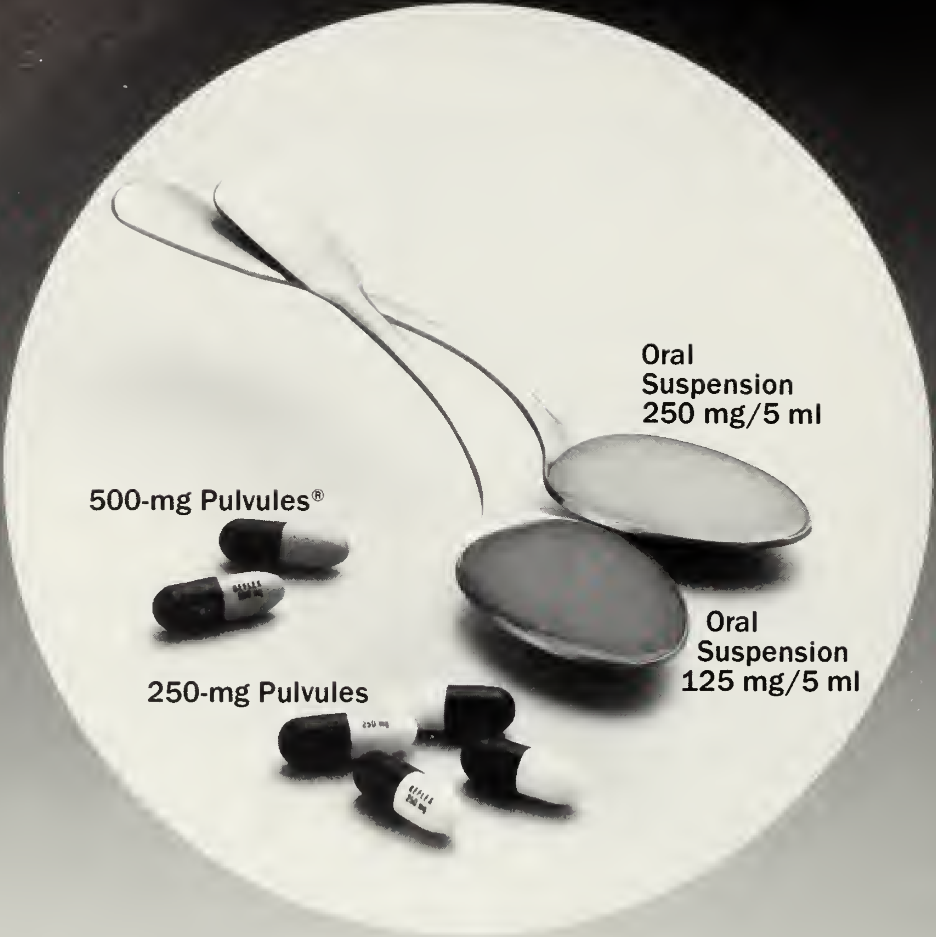

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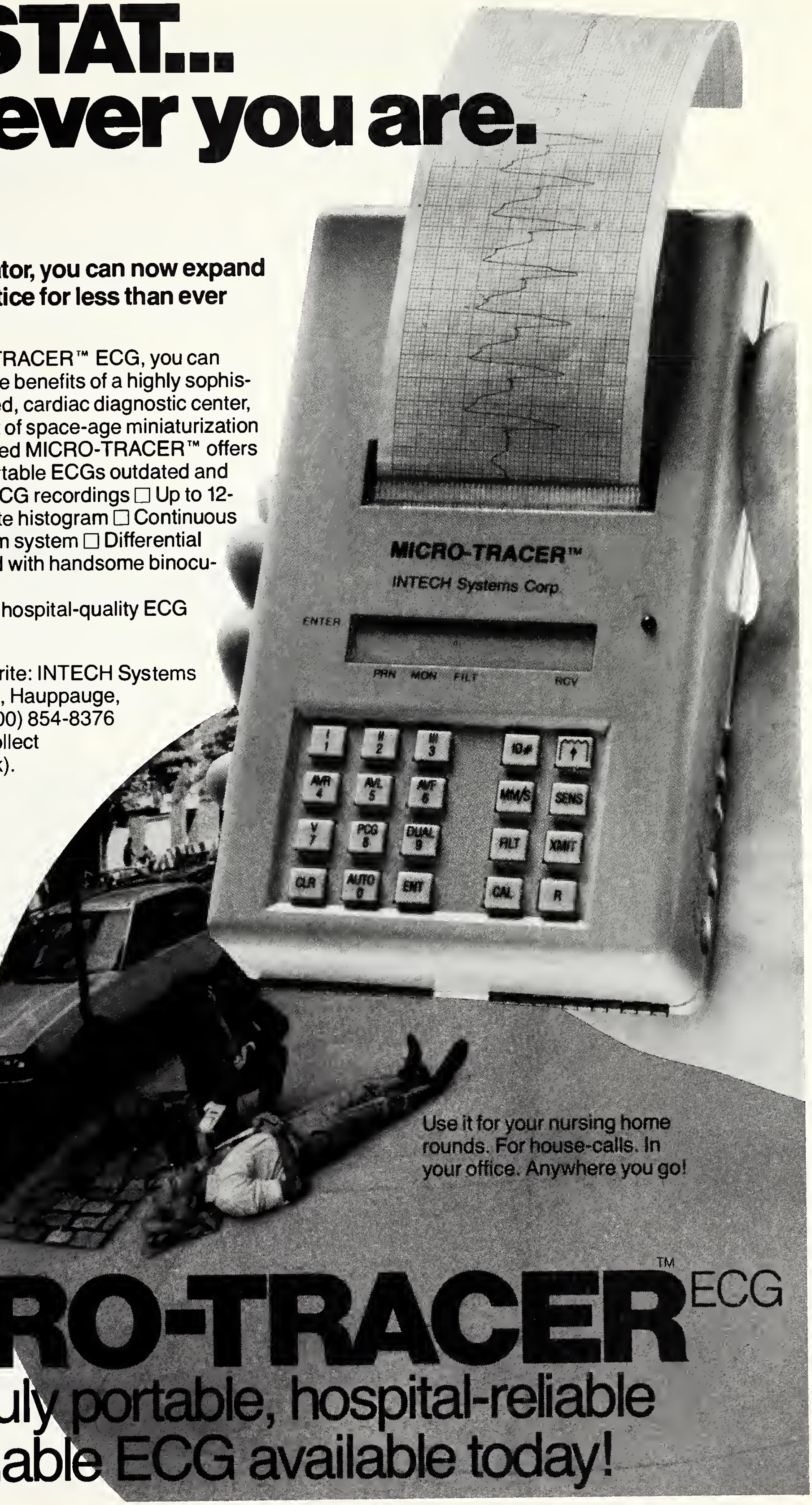

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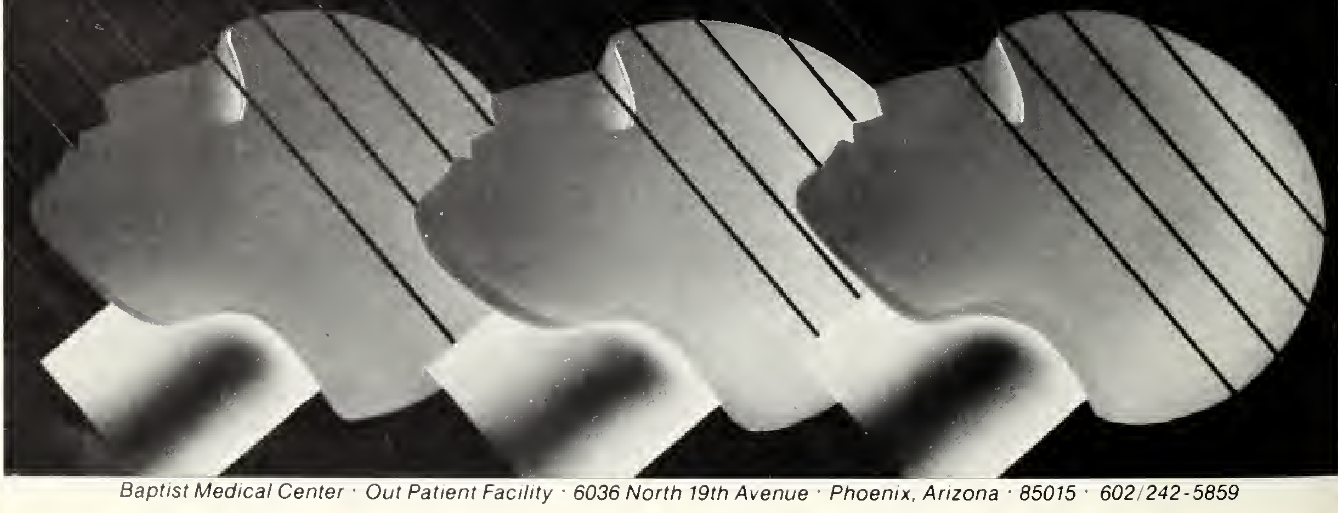

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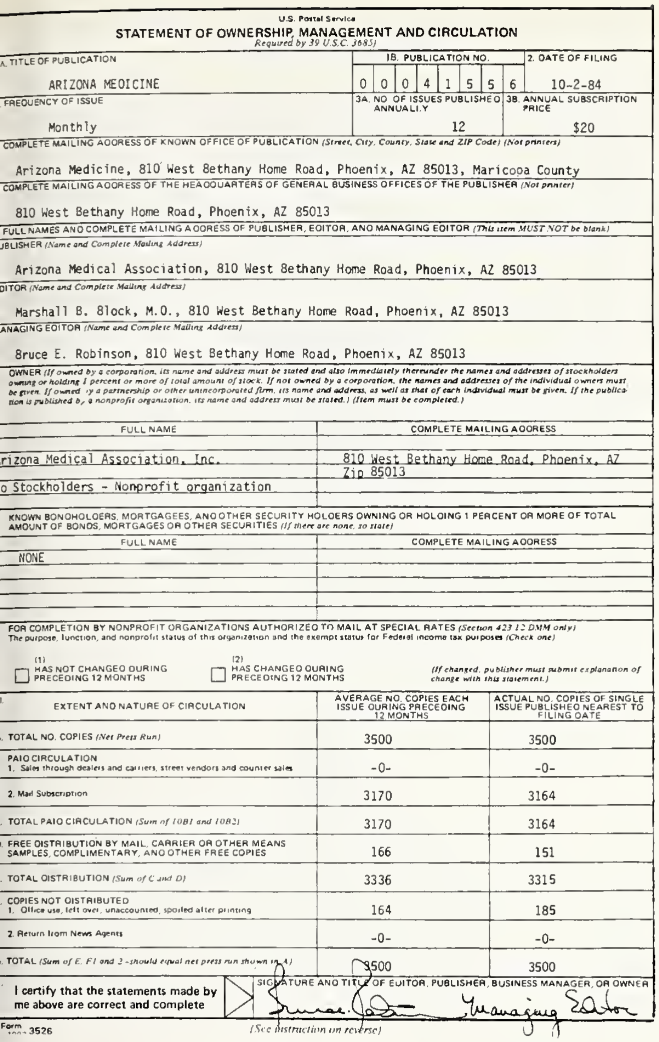

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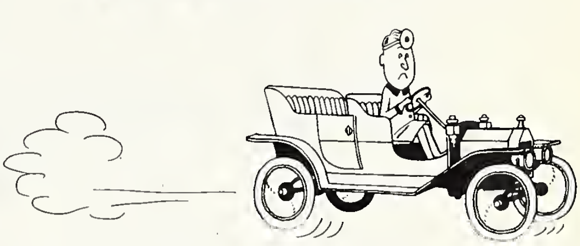

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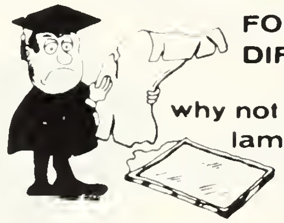

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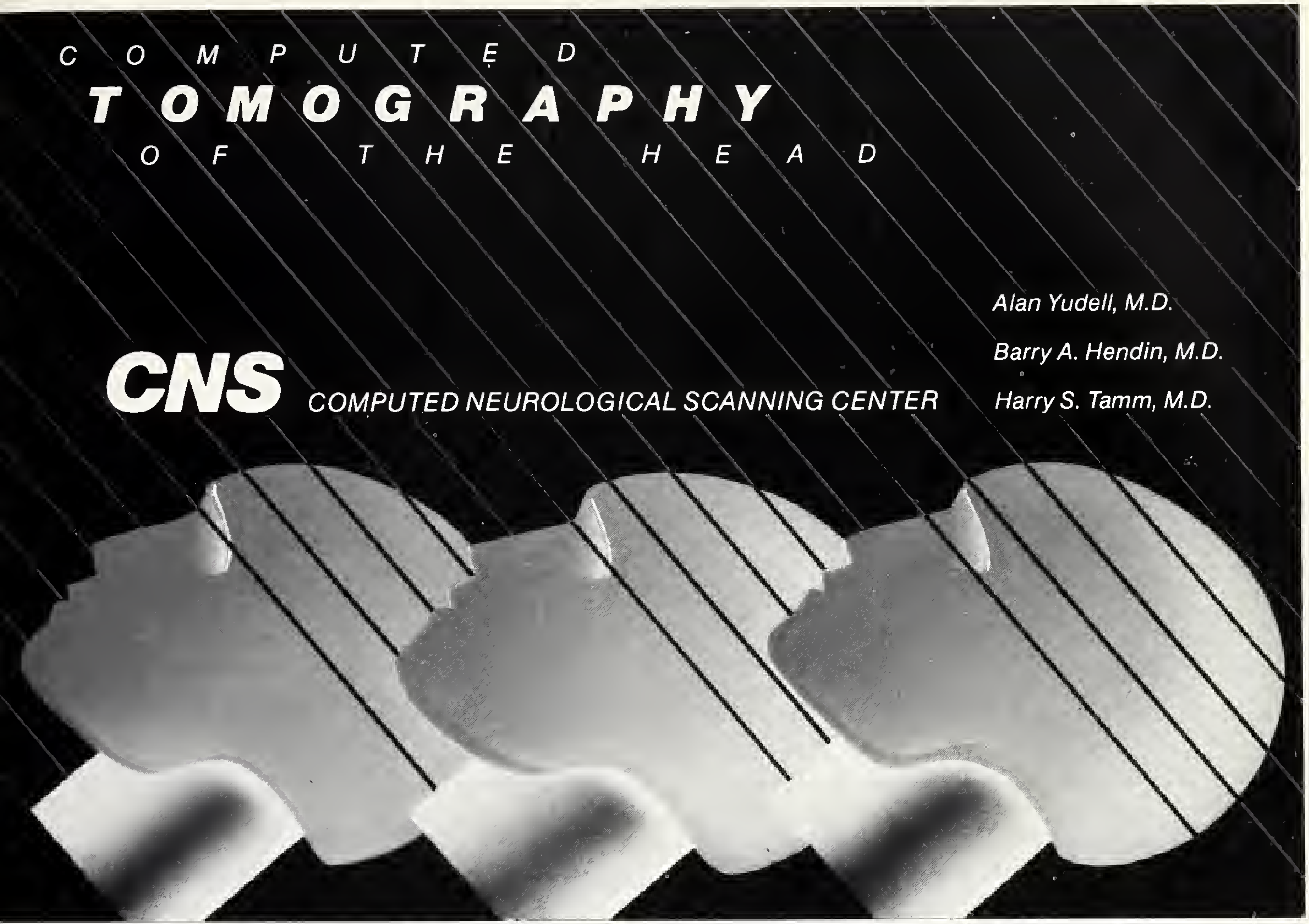

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Dermatology

The Pyogenic Granuloma

Frank A. Bucci, Jr., M.D.
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Pyogenic granuloma is a rapidly proliferating benign angiomatous nodular swelling that occurs in the skin and mucous membranes. It persists as a single polypoid or sessile red nodule with a smooth surface that is prone to hemorrhage and ulceration. It is also known as granuloma telangiectanticum, pedunculatum benignum, hemangioma of pregnancy, pregnancy tumor, pregnancy epulis, pregnancy warts, bloody warts, botryomycoma, pseudobotryomycoma, and lobular capillary hemangioma.

In 1897, Poncet and Dor used the term botryomycosis hominis to describe the vascular masses seen on the fingers and arms of four patients. These masses resembled the tumors previously identified on the spermatic cords of castrated horses.[1] They thought this was the human form of a lesion caused by a specific organism, the botryomycetes. In 1904, Hartzell introduced the term granuloma pyogenicum, believing that these neoplasms represented a granulation tissue response to an infectious agent.[2]

The specific morphology of pyogenic granuloma has recently been defined and clearly distinguished from granulation tissue.[3] The distinct pattern of cellular capillary lobules separated by a fibromyxoid stroma is the essential pathologic criterion for making the diagnosis of all types of pyogenic granuloma including the polypoid intradermal, subcutaneous and intravenous types Thus, the term pyogenic granuloma is a "causal anc pathologic misnomer for granulation tissue."[3] In 1980 the term lobular capillary hemangioma as a replacemen for pyogenic granuloma was introduced to emphasiz the diagnostic histologic features of this lesion.[4]

Solitary cutaneous pyogenic granulomas can occur a any age, but the young are more often affected.[5] Recurrent pyogenic granuloma with satellite lesions almos always occurs in patients less than 25 years old.[5-7] A stud in 1980 of 73 cases from the oral and nasal mucou membranes showed that patients younger than 18 wer predominantly males (82%), patients between 18 and 3 were predominantly females (86%), and for patients 4 and older there was no sexual predominance.[4] The 18 t 39 age group is weighted by lesions occurring durin pregnancy, the well-known pregnancy tumor.

Pyogenic granuloma has been reported to occur i association with various forms of tissue trauma and irritation. For example, pyogenic granuloma has develope in the scars of burn patients, at sites of irritation due t ill-fitting dentures, following hair transplantation procedures, and even following nose-boring for the wearin of ornaments by young Indian women.[8]

Etiology

The specific etiology of pyogenic granuloma i unknown. A hormonal role in the pathogenesis i strongly suggested by: 1) the regression of pyogeni granuloma in pregnant women after delivery;[9] 2) th incidence of pyogenic granuloma in women using oral contraceptives;[10] and 3) the distinct variations with ag in the sexual distribution, especially with oral-nasa lesions as mentioned above. In addition, female dogs treated with progesterone displayed dilatation and tortuosity of oral mucosal vessels,[4] and this may relate to the development of pyogenic granuloma in pregnant women.

Trauma has long been assumed to play a major role in the pathogenesis of pyogenic granuloma. It was recently reported that trauma was a significant factor in only a minority of cases of oral-nasal pyogenic granuloma[4] and that the occurrence of deep non-ulcerated pyogenic granuloma with no histologic evidence of tissue damage or inflammatory cells "is additional evidence against the necessity of injury as the initiating event."[11] In contrast, satellitosis of pyogenic granuloma is closely linked to the trauma or irritation of the primary lesion.

It has been proposed that arteriovenous anastomoses are associated with the pathogenesis of pyogenic granuloma. Recently observed were two patients with a pyogenic granuloma inside of a port-wine stain.[11] Since port-wine stains (nevus flammeus) are often associated with arteriovenous anastomoses, this finding provides additional support for their involvement in the pathogenesis of pyogenic granuloma.

A number of authors have suggested that a specific diffusible substance may be responsible for the development of numerous satellite lesions following the occur-

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nce of a primary pyogenic granuloma.[12] In one vestigation, soluble tumor extracts and direct tissue plantation of pyogenic granuloma were used in a nsparent hamster cheek pouch chamber. These subnces were clearly shown to induce significant sequen- l vascular tortuosity, vasodilation, and proliferation.[13] addition, tumor angiogenic factor has independently en shown to induce endothelial cell mitosis.[14]

inical Manifestations

A typical pyogenic granuloma will occur and persist as solitary lesion. It consists of a reddish-brown moderely firm non-tender nodule that often develops superial ulceration and crusting over its previously smooth rface (Figure 1). The lesions most commonly occur on e hands, forearms, face and in all parts of the oral vity. Multiple satellite lesions have a tendency to erupt the trunk, especially near the scapular region.[5] During pregnancy, lesions of the oral mucosa are the most mmon.[4] Subcutaneous pyogenic granuloma occurs ost often over the volar surfaces of the hand and finers,[15] while intravenous pyogenic granulomas most mmonly involve the neck and forearm.[6]

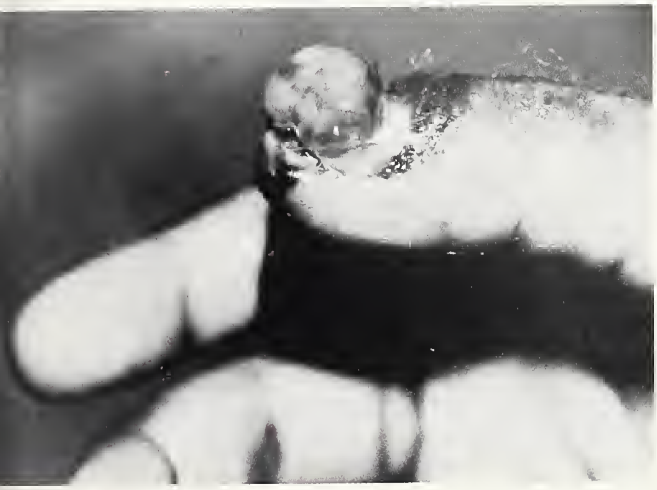

Figure 1
Exophytic flesh tumor of finger—a pyogenic granuloma.

The lips and not the gingivae is the most common site or oral-nasal lesions.[4] Previous studies[16] are suspected f reporting ordinary gingival granuloma tissue as yogenic granuloma. A similar discrepancy occurred ith lesions of the larynx and trachea that often develop ollowing tracheostomies or intubation.[17] Sixty-eight aryngotracheal specimens were found to be masses of ranulation tissue not meeting the current histologic riteria for the diagnosis of pyogenic granuloma.[4]

The average size of a solitary intradermal nodule anges from 0.5 to 2 cm,[5] but may be as large as 6 cm. A esion may initially grow insidiously, but frequently ndergoes a period of rapid growth which is sustained ntil the lesion attains its maximum size. Palpation may eveal that a substantial portion of the nodule lies deep within the dermis. The lesions tend to bleed easily even fter mild trauma. Of 73 cases of oral-nasal pyogenic granuloma, bleeding was the most common presenting complaint (82%).[4]

Histopathology

On histologic examination, a relatively circumscribed pedunculated lesion covered by a flattened epidermis is seen. Numerous newly formed capillaries that exhibit prominent endothelial proliferation and varying degrees of dilatation are evident. There is usually a nonspecific inflammatory infiltrate, often containing polymorphonuclear neutrophilic leukocytes. The stroma in which the capillary proliferations are embedded appear edematous and do not contain mature collagen bundles.

The epidermis at the lesion's base grows downward and inward forming the characteristic epidermal "collarette." This pattern of growth gives the pyogenic granuloma its pedunculated appearance. Small early satellite lesions do not form an epidermal collar and thus are more often sessile than pedunculated.

Early lesions do not exhibit inflammatory reactions. Secondary inflammatory changes are often present in the stroma of older lesions due to the erosion of the thinned epidermis.

In the past pyogenic granuloma was thought to originate from the pyogenic infections of small wounds. Based on the histologic picture of endothelial proliferation, it is currently believed that this lesion is actually a capillary hemangioma. Even in older eroded lesions that exhibit marked superficial inflammatory infiltrates, the deeper regions maintain the histologic appearance of a capillary hemangioma.

Pyogenic granuloma must be differentiated from infantile capillary hemangiomas, granulation tissue, and early Kaposi's sarcoma. The infantile capillary hemangiomas do not form the typical collarette of pyogenic granuloma and thus there is no pedunculation of this lesion. Also, the infantile capillary hemangioma does not display an edematous stroma or a thinning epidermis.

Pyogenic granulomas with pronounced inflammatory infiltrates may be difficult to distinguish from granulation tissue. An ulcerated and inflamed pyogenic granuloma may actually be covered with a layer of true granulation tissue. The lesions are differentiated by the deep layers of the pyogenic granuloma which maintain the unique lobular capillary pattern. In contrast, the capillaries of granulation tissue display a dispersed or radial pattern throughout all layers of the lesions.

Early Kaposi's sarcoma may show vascular proliferation and inflammatory infiltrates, but there is usually no atrophy of the epidermis or collarette formation. In most cases of Kaposi's sarcoma, areas of fibroblastic proliferation and extravasation of red blood cells can be found.

Therapy

Once a biopsy has been taken, many of the most common surgical and dermatological modalities may be used to remove this lesion. Effective means of treatment include simple excision, sharp curettage, electrodessication, cryosurgery, laser therapy, and chemical cauterization with silver nitrate. Radiation therapy, although used frequently in the past, is rarely used today.

Acknowledgements

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Non-A, Non-B (NANB) Hepatitis

The Extent of the Problem

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Since first recognized in 1974, the NANB agents hav emerged as an important cause of liver disease.[1] Thes agents are filterable, transmissible, hepatotrophic viruses with a worldwide distribution. They are transmitte through percutaneous and nonpercutaneous route and may account for 20% to 50% of all cases of hepatitis. Patient populations at increased risk include hemophiliacs, homosexuals, intravenous drug abusers, renal transplant and hemodialysis patients, health car professionals and investigators, hospitalized patient and neonates born to mothers with coexistent NAN hepatitis. However, recipients of transfused blood are a greatest risk. Seven to ten percent of transfused patient acquire post-transfusion hepatitis with 85% to 95% o these cases caused by the NANB agents.[3] The health an economic impact of this problem is immense. Efforts t establish the serologic identity of these agents hav been unsuccessful. Consequently, the problem ha been complicated by an inability to identify immune an susceptible persons and more importantly NAN chronic carriers who serve as reservoirs for transmissio of disease.

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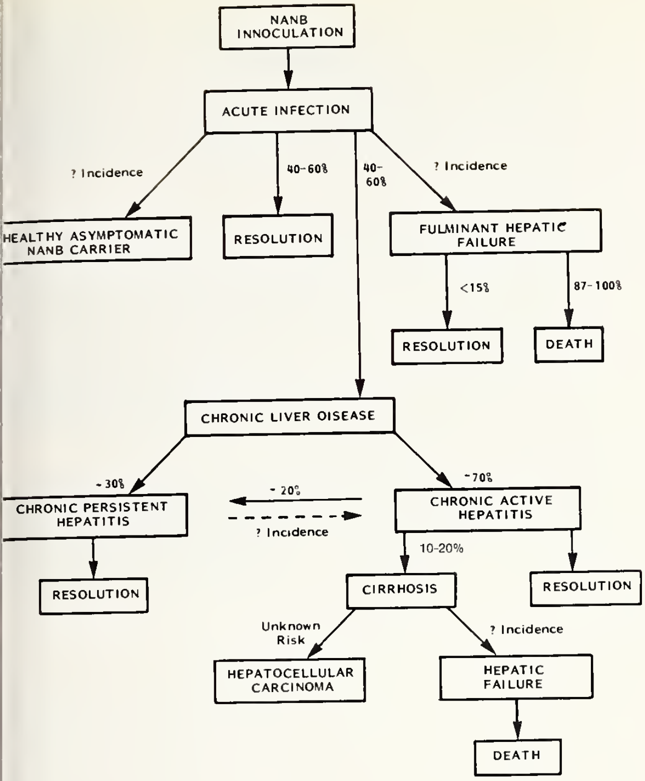

Figure 1
tential clinical events following a single unit transfusion of ood containing NON-A, NON-B (NANB) agents.

Figure 1 depicts the potential clinical events which ay occur after infusion of blood containing NANB ruses. Acute hepatitis follows an incubation period of pproximately eight weeks. Aminotransferase enzyme evations ordinarily do not exceed 800 IU and the clini-l illness is usually mild with anicteric, asymptomatic ases predominating. Viremia may persist throughout e clinical illness with the risk of infectivity declining as iochemical derangements improve.[4] Management onsists of symptomatic and supportive care. In 40% to 0% of patients the acute illness resolves without com-lication after a duration of approximately 12 weeks.

Acute fulminant hepatic failure may occur in a small ercentage of patients; however, in the absence of spe-ific serologic markers the precise incidence is nknown. Renal transplant and immunodeficient atients, neonates of mothers with NANB hepatitis and atients with underlying chronic liver disease are at reatest risk.[3] The mortality associated with this compli-ation has been reported to vary between 87% and 00%.[5,6]

Acute infection may be followed by emergence of a ealthy asymptomatic chronic carrier state. This is a najor health problem, for these patients serve as an nidentified source of infection. Based upon the inci-ence of NANB hepatitis following single unit transfu-ions, the frequency of the NANB carrier state in the eneral population is estimated at 3% to 7%.[3] This xceeds by 15 to 70 fold the 0.1% to 0.2% frequency of chronic carriers of hepatitis B surface antigen in the United States.

The most significant complication of acute transfusion-associated NANB hepatitis is progression to chronic liver disease. Forty percent to sixty percent of patients with acute hepatitis manifest sustained elevations in aminotransferase enzyme levels for greater than six months.[3] There are no clinical, biochemical or histologic features which are predictive of development of chronic disease. Chronic persistent hepatitis accounts for approximately 30% of cases.[7-10] This is a benign, nonprogressive illness not associated with symptoms or stigmata of chronic liver disease and is characterized by portal inflammation and associated low level aminotransferase enzyme elevations. These histologic and biochemical abnormalities may resolve or persist indefinitely, however, in either case, the benign nonprogressive nature of the illness does not warrant therapy. Some cases of chronic persistent hepatitis may represent an inactive phase of chronic active hepatitis. Consequently, reversion from chronic persistent to chronic active hepatitis may occur.[11]

Chronic active hepatitis is the most common sequela following acute NANB hepatitis, accounting for approximately 70% of chronic cases.[7-10] Characteristic histologic features consist of periportal mononuclear cell inflammation with erosion of the limiting plate (piecemeal necrosis). More aggressive morphologic changes such as bridging or confluent necrosis are uncommon and when seen usually occur in immunocompromised patients. Symptoms of anorexia, weakness and fatigue are generally mild despite fluctuation in aminotransferase enzyme levels and autoimmune markers and profound hypergammaglobulinemia are absent. Clinical, biochemical and histologic abnormalities may slowly and spontaneously return to normal in some patients, or morphologic manifestations may revert to more benign features consistent with chronic persistent hepatitis. Corticosteroid therapy for unremitting, symptomatic disease has not been uniformly successful and standard therapeutic guidelines for its use have not been established.[12] Overall, the cumulative probability of patients with chronic liver disease (chronic active and chronic persistent hepatitis) achieving spontaneous biochemical resolution within three years is 54%.[13]

Although in most patients NANB chronic active hepatitis is a mild, indolent disease, progression to cirrhosis may occur in 10% to 20% of cases.[7,9,14] Cirrhosis can be detected as early as four months to one year after onset of acute hepatitis and may progress in an insidious, asymptomatic fashion. The clinical course may be complicated by development of portal hypertension, variceal hemorrhage, portosystemic encephalopathy and death from hepatic failure.

Hepatocellular carcinoma has been described in a few patients with previous NANB hepatitis or cirrhosis, however, it is not clear whether the NANB agents are a factor in the pathogenesis of this tumor.

Prevention of acute NANB hepatitis is the preferred method of management. It has been clearly shown that blood obtained from paid donors is more infectious than blood derived from volunteers. Also, hepatitis is probably more likely following transfusion of pooled blood products compared to blood concentrates harvested from single donors.[16] Therefore, essential preventative measures include avoidance of pooled blood products when possible, exclusion of commercial sources of blood in favor of volunteer donors and restricting transfusions to clinical situations in which blood is mandatory. Single unit transfusions are seldom indicated.

Unequivocal therapeutic recommendations regarding postexposure prophylaxis for NANB hepatitis cannot be made. The risk of developing NANB infection following needlestick accidents or sexual or perinatal exposures have not been established. However, based upon limited data and given the safety and cost of immune globulin, prophylaxis with 0.06 ml per kg intramuscularly for sexual, perinatal and percutaneous NANB exposures may be reasonable treatment.[17] The efficacy of this therapy has not been determined.

Summary

Transfusion of blood is not an innocuous procedure. Seven to ten percent of blood recipients will acquire acute post-transfusion hepatitis with NANB agents responsible for 85% to 95% of cases. Chronic liver disease will follow acute NANB infection in 40% to 60% of patients with hepatic histologic features most commonly consistent with chronic active hepatitis. Ten percent to twenty percent of these patients will progress to cirrhosis. Until specific diagnostic, serologic markers become available the most effective means of reducing the incidence of transfusion-associated hepatitis due to NANB agents is through exclusive use of volunteer blood.

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Medical Therapeutics

hronic Aspirin ntoxication:

Case Report and terature Review

nathan E. Schwartz, M.D.

ostract

Chronic salicylate intoxication is a relatively common ut frequently unrecognized clinical problem. The diagosis often is missed due to the wide array of signs and mptoms of toxicity which are common to many disases. Thus, the prompt diagnosis and treatment rely oon the physician's familiarity with clinical presentaons of this disease entity. Delay in diagnosis and treatent is associated with a significant increase in orbidity and mortality, particularly in elderly dividuals.

troduction

Salicylates have been used therapeutically for more an 200 years and today remain important in the treatent of a variety of ailments ranging from the common eadache to transient ischemic attacks to rheumatoid thritis.[1,15,22] Because of its time-honored efficacy and e relative ease with which it can be obtained, the side fects of this potentially dangerous drug may be easily verlooked. Toxicity of aspirin is an important clinical roblem not only in acute accidental or intentional gestion, but also in cases of "therapeutic" intoxication the patient taking aspirin for medical puroses.[7,8,13,16,17] Chronic salicylate intoxication, though ecoming more recognized in the literature, still emains a diagnostic dilemma. This is particularly true in e patient with multiple medical problems, in whom e results of toxicity often are confused with the undering illness.

The following case presentation is that of a patient with breast carcinoma who presented with worsening of long-standing neurologic problems, at first thought attributable to her many medical problems. On further investigation, her symptoms were found to be a direct result of chronic salicylate abuse.

Case History

The patient was a 58-year-old white female with a history of breast cancer for which she had undergone a right radical mastectomy in 1973. Metastatic disease to cervical spine, right and left humerus as well as right scapula had appeared since that time and had responded somewhat to local radiotherapy and hormonal manipulations. In December 1982, the patient was admitted for work-up of increasing ataxia, bilateral hearing loss, visual aberrations, dysarthria and global headaches. These symptoms had been noted in hospital records as far back as February 1982. The patient and her husband stated that these symptoms had been occurring for at least two years and had recently worsened. The patient denied tinnitus, nausea, vomiting and fever. Past medical history was remarkable for spinal fusion in 1964. Social history was remarkable in that the husband was a pharmacist.

Physical examination revealed a chronically ill female somewhat confused and disoriented. She was afebrile. Respiration rate was 24; blood pressure 140/60; pulse 88. She was not orthostatic. Lungs were clear; cardiovascular, abdominal and extremities examinations were within normal limits. Neurologic exam indicated patient was oriented to place and person, not time. Coordination was poor with an ataxic wide-based gait noted. Cranial nerves, motor and sensory exams were within normal limits. EKG and chest x-ray were unremarkable. Na-141, K-3.2, C1-97, bicarbonate -17.2, BUN-26, Cr-2.0, glucose-79, Anion gap-27, Uric acid-1.5, PT-PTT and liver function tests-WNL, urine analysis-pH 5.5, 3+Ketones, no glucose, arterial blood gas on room air-pH 7.48, PCO_2-20.7, PO_2-103, HCO_3-15. Because of the high anion gap and marked respiratory alkalosis, a salicylate level was obtained equal to 800 micrograms per ml (20-200 micrograms/ml therapeutic range).

On further questioning, the patient admitted taking 6 to 8 aspirin tablets per day for chronic headache and neck pain, and had recently increased the amount due to worsening symptoms.

As treatment, all salicylates were withheld and a vigorous glucose-saline diuresis was initiated. The plasma salicylate levels were as follows: at 12 hours, 501; at 24 hours, 356. By the third day of admission, salicylate levels were undetectable. With decreasing salicylate levels, the patient's neurologic status improved. She had complete return of normal hearing and vision. Her ataxia was gone and she required minimal assistance when walking.

Discussion

The term "therapeutic salicylate intoxication" has been applied to the use of high dose salicylates in patients given long-term salicylate therapy for treatment purposes, such as in rheumatoid arthritis. These patients

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walk a fine line between therapeutic and toxic levels, owing to the non-linear, saturable kinetics of salicylate elimination.[6] Repeated doses can lead to accumulation in the body. As a result, the difference between safe and toxic levels may be only one or two aspirin tablets. Under the close scrutiny of a trained physician, this therapy can be carried out safely and effectively. Occasionally, in these patients and in less well-supervised patients, aspirin can become an extremely toxic drug.

The signs and symptoms of salicylate toxicity are, at times, unfortunately similar to the condition under treatment. There is a great deal of individual variation in the development of symptoms. In some patients, symptoms may begin at a dose of 3g per day. In others, symptoms do not appear until dosage reaches 10g per day. There is little correlation between toxic symptoms and serum salicylate levels, but few persons become intoxicated at levels less than 15 mg per deciliter, and most show symptoms at levels greater than 35 mg per deciliter. (See Tables 1 and 2).

Table 1
Signs and Symptoms of Salicylate Toxicity

CNS
Headache, dizziness, tinnitus, hearing difficulties, decreased vision, mental confusion, lassitude, drowsiness, seizures, vertigo, tremor, diplopia, delirium, hallucinations, restlessness, incoherent speech, papilledema, brain edema,[5,9] encephalopathy, asterixis,[19] and coma

Respiratory
Hyperventilation, pulmonary edema[12,26]

Cardiovascular
Tachycardia, collapse in later stages

Renal
Oliguria

GI
Epigastric distress, nausea, vomiting, anorexia, abdominal pain, diarrhea, occult blood loss and hemorrhage

Dermatologic
Skin eruptions

Hemorrhagic
Petchial hemorrhage, thrombocytopenic purpura

Other
Hyperpyrexia, sweating, thirst

Pathophysiology

The primary pathophysiologic effects of salicylate toxicity can be divided into central and peripheral actions and account for the metabolic derangement seen in aspirin overdose.[23] In the central nervous system, salicylates stimulate the respiratory mechanisms. This appears to be a direct toxic effect and is not dependent upon increased oxygen consumption or increased carbon dioxide production.[14,28] Experimental studies have demonstrated increased pulmonary ventilation with injection of sodium salicylate into the cerebral ventricles cisterna magna of animals.[28-30] Both the rate and dept of respiration are increased. Hyperventilation leads hypocapnia and a respiratory alkalosis.

Table 2
Abnormal Laboratory Findings in Salicylate Toxicity

High anion gap metabolic acidosis
Respiratory alkalosis
Hypo or hypernatremia
Hypokalemia
Hypo or hyperglycemia
Hypouricemia
Altered renal function
Abnormal liver functions
Increased prothrombin time
Hypothrombinemia
Ketosis
Glycosuria
SIADH-like picture[21]
Increased salicylate levels in CSF[14]
EEG changes[10]

The peripheral actions of salicylates are complex, pa ticularly when combined with the results of centr actions. These include uncoupling of oxidative pho phorylation, inhibition of several enzymes in the Kreb cycle, interference with normal glucose metabolism an inhibition of amino acid metabolism. As a result, there an accumulation of organic acid anions such as lactat and pyruvate. There also is an increased demand f glucose which leads to stimulation of lipid metabolis and formation of ketone bodies. Salicylic acid, organ acid and ketone bodies contribute to an increased anio gap metabolic acidosis often seen in chronic salicylat toxicity. A blood salicylate level of 100 mg per decilite contributes 7.3 meq per liter to the anion gap.[19] Anothe effect of the acidemia is an increased amount of noni nized, diffusable salicylic acid, enhancing the accumula tion of salicylate in the central nervous system an thereby aggravating the central actions.[3]

The acid-base pattern of the individual patie depends on the balance between central and periphera actions. In one study, more than fifty percent of adult with salicylate intoxication exhibited a mixed respirator alkalosis and metabolic acidosis with an increased anio gap.[24] Although it is not clear in this study how many these patients were chronically intoxicated, Temple sug gests that this is the predominant pattern in chroni intoxication.[21]

Diagnosis

The diagnosis of salicylism in the adult is suggested b a history of aspirin ingestion, nausea and tinnitus and b the presence of hyperventilation, nonfocal neurologi abnormalities, a mixed acid-base disorder with a increased anion gap, increased prothrombin time, a lo serum uric acid and a positive urine ferric chloride test A serum salicylate level should be used to confirm th diagnosis. In the young adult who has ingested salicy lates as a suicide gesture, this diagnosis is easily made

fortunately, as was the case with our patient, in older
lividuals taking salicylates for therapeutic purposes,
e diagnosis is not as readily apparent. In this setting,
ay in diagnosis is associated with significant mortality.
Anderson, et al.[29] studied 73 consecutive adults hospi-
zed for salicylate poisoning. A history of chronic sali-
ate use was encountered in ten percent of these
tients. Two distinct modes of clinical presentation
re observed. Group 1 patients generally were young
ean age 32.3 years) and had ingested salicylates for the
rpose of suicide. Many had a previous history of drug
erdose or psychiatric treatment and rarely had asso-
ted medical problems. The diagnosis was relatively
aightforward and treatment promptly initiated. In
ntrast, a second group was delineated. None in this
oup volunteered a history of salicylate ingestion.
nen compared to the first group, these patients were
der (mean age 53.4 years), had no previous history of
ug overdose or psychiatric therapy and had a high
quency of associated medical problems. In this
cond group, salicylate overdose was subsequently
und to be unintentional, resulting from use for asso-
ted medical problems. These medical problems
cluded degenerative joint disease, atherosclerotic car-
ovascular disease, disseminated carcinoma, viral
eningitis, and obstructive lung disease. Admitting
agnoses were reviewed in these patients and were as
lows: cardiopulmonary disease, encephalopathy of
known origin, alcohol withdrawal and metabolic aci-
sis of unknown origin. These first two diagnoses
counted for over one-half of the admitting diagnoses.
comparing clinical features of both groups, there was
significantly greater frequency of neurologic abnor-
alities in the second group, including confusion, agita-
on, hyperactivity, slurred speech, hallucinations,
neralized seizures and coma. In addition, decreased
ditory acuity and tinnitus were more frequently eli-
ed as complaints. Of interest was the high number of
tensive neurologic evaluations undertaken before a
agnosis of salicylate intoxication was established.

Another important point made in the study was the
fect of delay of diagnosis on outcome. In the second
oup, the diagnosis was delayed as long as 72 hours
ter admission and was unfortunately associated with
gh mortality, 25 percent; and morbidity, 30 percent.
is was in contrast to the first group, in which mortality
as low, two percent, as well as morbidity, 16 percent.[27]
erefore, salicylate toxicity should be considered in all
tients with unexplained altered mental status, acid-
se abnormalities and tachypnea.

lanagement

Since a specific antidote for salicylate poisoning is not
ailable, treatment is generally symptomatic and sup-
ortive. The therapeutic objectives are to correct fluid,
ectrolyte and metabolic imbalance that have occurred
nd to hasten the excretion of salicylate, keeping in
ind the length of time over which the intoxication
ccurred. Our patient merely required intravenous
ydration with simple withholding of the drug.

A nomogram relating salicylate levels to the severity of intoxication at varying time intervals has been devised and is useful in managing acute ingestions.[18] Unfortunately, it has not been found to be helpful in predicting degree of intoxication in chronic salicylate intoxication.[4,5,21] Degree of clinical abnormalities, generally neurologic, have been the only useful factors of assessment in chronic toxicity.[25] Serial determinations of the salicylate level also are helpful in monitoring the effectiveness of therapy.

Gastric emptying by emesis or lavage is helpful in acute intoxication but is not always applicable in chronic overdosage. Adequate intravenous hydration is certainly appropriate. Avoidance of overhydration is important, particularly in the older debilitated patient. If severe acidosis is present, correction is essential, especially since acidosis results in a shift of salicylate from plasma into brain and other tissues. In this case, intravenous bicarbonate is recommended.[19,21,22] Close monitoring of arterial blood gases may be required in this setting to avoid severe alkalemia. Hypoglycemia and ketosis, if present, should be corrected with glucose.

Elimination of salicylate from the body can be enhanced by increasing urine flow with a saline-glucose diuresis and by alkalinizing the urine.[20] The renal clearance of salicylate is enhanced 10 to 20 times if the pH of urine can be maintained between seven and eight. Potasium replacement is vital in this setting, as alkaline diuresis causes increased potassium excretion.

Finally, in cases of severe intoxication, renal insufficiency, unresponsive acidosis, persistent central nervous system manifestations or progressive deterioration, hemodialysis has been recommended.[20]

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Neurology

Helmets, Head Injuries and Motorcycles

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From the first of January through Labor Day weeken of 1984, in Arizona, a motorcycle was involved in one ou of eighteen motor vehicle accidents. During this sam period, there were fifteen fatalities among motorcycl riders. Only four of the dead riders were wearin helmets. These statistics are, unfortunately, typical fo states which repealed their mandatory helmet laws following the passage of the Federal Highway Act of 1976.[1] The 1976 law, passed over the objections of many in th medical community,[3] removed the authority of th Secretary of Transportation to withdraw Federal Highway Funds from states without mandatory helmet law for all motorcyclists. Arizona is one of twenty states tha modified its law to require helmets only for riders unde eighteen years of age.

The Federal Highway Act of 1966, set the minimum standards for state highway safety programs. The subsequent enactment by many states of mandatory motorcycle helmet laws, led to a dramatic drop in the number o deaths and severe brain injuries due to motorcycle accidents in the United States.[1] This occurred in spite of an almost five hundred percent increase in the number o motorcycle riders. The fatality rate dropped from 12.7 per 10,000 registered vehicles in 1965, to 6.4 per 10,000 in

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75. With the effective repeal of the 1966 law following ssage of the 1976 Federal Highway Act and the subseient modification of many state laws, the rate again se quickly and has approximated the pre-1966 figures r the last several years. This is in spite of efforts by ncerned motorcycle organizations and public authores promoting voluntary helmet use and increased cle rider safety educational programs.

Epidemiological studies[4] have shown that two-thirds accidents involve a second motor vehicle and are not ecessarily the motorcyclist's fault. The more frequent e motorcycle use, the higher the accident rate. The der's experience, safety training or brand of vehicle do t appear to correlate with the accident rates. In view these statistics some additional measures for rider otection would appear to be necessary.

Since the vehicle itself does not lend much protection a crash, attention has chiefly been directed toward miting damage to the more vulnerable organs of the ccupants. Beginning with the pioneering work of airns in England in the 1940s,[5,6] attention has been rected toward the development of suitable head proction. Statistical studies of motorcycle injuries indicate at while extremity injuries are most common, head juries are most likely to be associated with prolonged sability or death.[7] McSwain, et al. in a current report,[8] ompared statistics from several states and showed that an accident, a helmeted rider is more likely to have his ost severe injury to an extremity. Head, face and neck juries are more common in the unhelmeted rider. nly 8.4% of helmeted riders sustained their most evere injury to the head as opposed to 29.1% of unheleted riders. Luna, et al. in their study from a Seattle auma center,[9] showed that while in severe accidents e death rate for helmeted and unhelmeted drivers was e same, in survivable accidents (in the no helmet roup) the incidence of severe brain injury was signifiantly higher. Additionally, the incidence of long-term eurologic deficit was 300% greater. In North Dakota hen injury statistics were evaluated after helmet law epeal, it was found that unhelmeted riders sustained an jury to the head three times as often as helmeted ders. During a four-year period, 77.9% of unhelmeted ders received a serious head injury as compared to 2.1% of helmeted riders.[2]

Convincing motorcyclists that wearing helmets is in heir best interest is an ongoing problem. The effect of elmet laws on compliance appears to be quite clear. rizona requires helmets for riders under age 18 only. A urvey done in 1978 after repeal of mandatory helmet aw,[1] showed that due to police difficulty in enforcing his type of law, the compliance rate is only 38% for the nder 18 mandatory states, but greater than 70% in states here helmets are required. In states with no law, overll helmet use varies from 25% to 50%. An informal study lone in metropolitan Phoenix over Labor Day weekend 984, of fifty consecutive motorcyclists showed that 40% vere wearing helmets while operating their vehicles. A epeat count of seventy consecutive riders during the following workweek showed that thirty of the seventy were wearing helmets. Peak helmet use was noted to be during "rush" hours when traffic speed was slowest.

Irrespective of the discomfort or bother of wearing a helmet, their effectiveness in reducing fatal or crippling head injury appears to be well proven. The same 1976 federal law that curtailed enforcement of helmet laws did set up a systematic study to evaluate the effectiveness of helmets in motorcycle accidents. Four states were chosen and statistics were gathered and compared to the 1966-76 period. The initial DOT 1980 report[1] from these states showed a threefold increase in the number of fatal head injuries following the law change. In the most recent summary of these studies reported this year in the *Journal of Trauma*[8], three of the four states reported an increase in the number of motorcycle deaths and all four had an increase in the number of head injuries with rates adjusted for the number of vehicles. While helmet laws were in effect, the death rate from motorcycle accidents dropped 30% nationally. In those states that repealed their laws, there has been a subsequent 38% increase in fatality rates.[10]

At the Barrow Neurological Institute in Phoenix, our experience parallels that reported from other primary neuro-trauma centers. Nineteen percent of admissions to the neurointensive care unit for head injury were due to motorcycle injury. The mean Glasgow Coma Scale on admission was 8.9 and at six hours was 9.2.[11] Twenty-seven percent had elevated blood alcohol levels and twenty-two percent required a neurosurgical procedure. Most patients had sustained trauma to more than one system. This was usually to the bones of the extremities. Fatalities, however, were most often due to the sequellae of the brain injury. Statistics regarding helmet usage were not kept during the entire study period but a review of the last ten admissions to the neurounit with Glasgow Coma Scores of less than ten revealed that none was wearing a helmet at the time of the accident. Other studies show similar figures.[8,12] The usual victim is male, in good health prior to the accident and between the ages of 18 and 30.

The question of requiring adults in a free society, who operate specific vehicles, to follow safety rules and regulations such as wearing motorcycle helmets is a controversial and emotional issue. The legality of requiring safety restraints such as helmets has been upheld when challenged in both state and federal courts.[1] The argument most often used against mandatory helmet usage, however, concerns the freedom of the individual to do what he or she wants with their own life. This, however, does not take into account the effect of an accident on the emotions of parents, spouses and other friends and relatives of the dead or brain-injured person. In addition, the cost to society in lost talent, investment in training and dollars in these days of diminishing medical reserves must be accounted for. In McSwain's study[8] the mean hospital cost for unhelmeted riders was 189% higher than for helmeted riders. Outpatient costs were also 182% higher for unhelmeted riders. In addition, twice the number of unhelmeted versus helmeted riders involved in accidents required the more costly inhospital care. All citizens pay for the cost of this care either through public monies (AHCCCS), increased insurance rates, litigation or disability insurance (Medicare).[13] Motorcycle user groups and industry have made a concentrated effort to educate the motorcyclist in the benefits of helmet usage. As noted, the effect in Arizona appears to be about a 40% helmet use rate. In states with mandatory laws, helmet usage approaches 97%. According to the 1980 DOT report, the effect of helmet law repeal in Arizona is a 50.4% increase in the death rate alone from expected to actual per year.[1] A review of the facts can only lead one to conclude: We have on our hands a major public health problem mainly affecting our youngest citizens. Motorcycle usage continues to become more popular both for recreational and commuter use. Tragically, a solution to part of the problem was in effect from 1966 to 1976 throughout most of the United States, but subsequently has been discarded.

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AM Ophthalmology

Glaucoma in General Practic

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Abstract

Glaucoma may be defined as an ocular entity consis ing of raised intraocular pressure, optic nerve damag and visual field defects. The majority of patients wit glaucoma are unaware of their condition and may no see an ophthalmologist until after considerable damage

Following are the risk factors: Family history of glaucoma, age above 40 years, diabetes, hypertension, dysthyroid disease, anemia, alcoholism, episodes o hypotension, blood loss and long term steroid therapy Vasodilators and some other drugs may precipitate a acute angle closure glaucoma in susceptible patients.

Key words: Glaucoma, intraocular pressure, opti nerve, visual field, diabetes, hypertension, steroids.

Introduction

Glaucoma is a group of heterogeneous ocular disorders with a common denominator of raised intraocular pressure (IOP). Such a pressure elevation in susceptible eyes may lead to cupping and atrophy of the optic nerve with concomitant loss of visual field. The process may progress to total irreversible blindness if left untreated. In 1977, based on government and commercial statistics, the prevalence of glaucoma in the United States was estimated to be approximately 1.4 million.[1]

The IOP is maintained by the continuous production of aqueous humor by the ciliary body. The aqueous is transparent and provides nutrition to the anterior segment of the eye. After formation it enters the anterior chamber (A.C.) via the pupil and then exits the eye to the ocular veins through the angle of A.C. (Figures 1 and 2.) The height of IOP elevation in glaucoma is determined by resistance to the flow of aqueous in its pathway, most commonly at the angle. The exact mechanism of damage to the optic nerve is not known but appears to be a combination of mechanical factors due to raised IOP and poor perfusion of the optic nerve.

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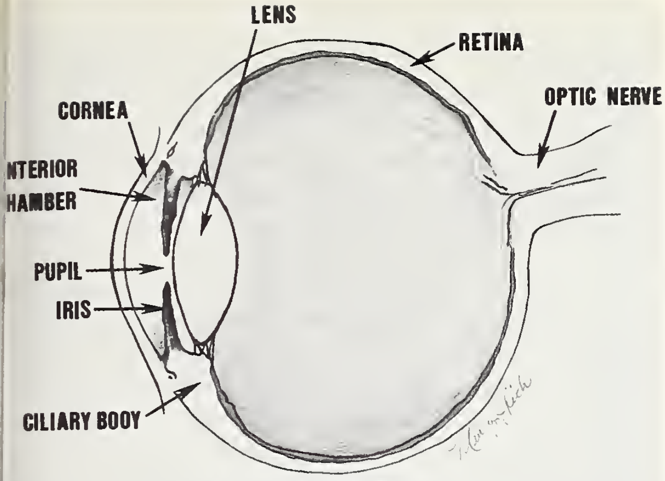
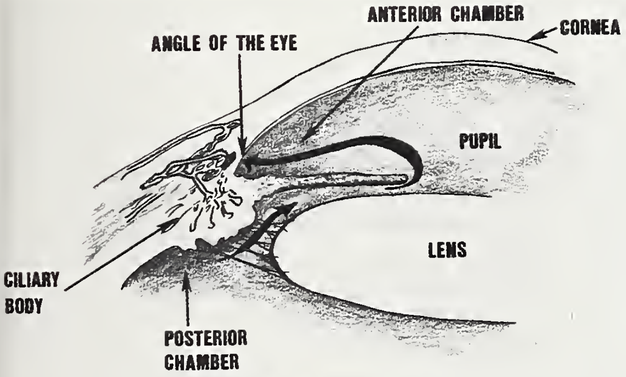


CROSS SECTION OF HUMAN EYE
FIGURE-1



FLOW OF AQUEOUS HUMOR
FIGURE-2

The diagnosis of glaucoma is made by checking raised OP by a tonometer, examining the eye with a biomicrocope, viewing the fundus with an ophthalmoscope to ote the appearance of the optic nerve and retina and uantifying the optic nerve damage by performing a isual field.

The glaucoma may be classified, in general, into primry and secondary glaucoma, depending upon whether r not the increase in pressure is related to some known ntecedent or concomitant ocular or systemic disease. he examples of primary and secondary glaucomas are hown in Table 1.

Primary Open Angle Glaucoma is a chronic, slowly rogressive, bilateral disease characterized by elevaions of IOP sufficient to produce damage to the optic erve in the absence of angle closure. The disease may roceed to absolute blindness without pain or other ymptoms. In almost all cases the elevated IOP is the esult of obstruction to outflow of aqueous humor in the rabecular meshwork—Schlemm's canal system of the ngle. The condition is usually familial and so family nembers and relatives need to be checked frequently. It tends to occur earlier and in a more severe form in blacks as compared to whites.[2]

Table 1
Classification and Examples of Glaucomas

PRIMARY

1. Primary open-angle glaucoma
2. Primary closed angle glaucoma
3. Infantile glaucoma

SECONDARY

Ocular Disorders
Trauma (surgical or otherwise)
Inflammation
Infection
Tumors
High Myopia
Retinal Detachment
Retinal Vein Occlusion
Retrolental Fibroplasia
Proliferative Diabetic Retinopathy
Aniridia
Steroid-Induced

Systemic Disorders
Carotid-Cavernous Fistula
Cavernous Sinus Thrombosis
Retrobulbar Tumors
Thyrotropic Exophthalmos
Superior Vena Cava Obstruction
Mediastinal Tumors
Sturge—Weber Syndrome
Neurofibromatosis
Nevus of Ota
Juvenile Xanthogranuloma
Marfan's Syndrome
Homocystinuria
Chromosome Abnormalities
Broad Thumb Syndrome (Rubinstein-Taybi Syndrome)
Pierre Robin Syndrome

Related Systemic Diseases

A. *Diabetes mellitus.* The prevalence of primary open angle glaucoma is several times higher in the diabetic population than in the general population.[3] In addition, the prevalence of diabetes or a positive glucose tolerance test is higher in patients with primary open-angle glaucoma.[4]

B. *Thyroid disorders.* Primary open angle glaucoma patients may have an increased prevalence of thyroid disturbances.[5] However, baseline thyroxine, thyrotopin (TSH) and triiodothyronine (T_3) resin uptake levels in patients with primary open-angle glaucoma do not differ from normal values.[6]

C. *Other endocrine disorders.* Elevated IOP has been detected in patients with Cushing's Syndrome.[7] Similarly pituitary disturbances may influence IOP.[8] Elevated estrogen or progesterone may lower IOP[9] while male hormones may raise it.[10]

D. *Cardiovascular disturbances common in primary open-angle glaucoma patients may be*: hypertension, hemodynamic crisis, acute blood loss, hypercoagulability (e.g. increased platelet adhesiveness and euglobinlysis time) and rhesus D(+) blood group.

Table 2 shows some of the features of primary open-angle glaucoma.

Primary Angle Closure Glaucoma is a bilateral disease characterized by abrupt elevation of IOP due to blockage of the angle by peripheral iris. This occurs when the pupil dilates in a susceptible eye e.g. following use of mydriatic drops, dim lights, parasympathetic suppressants (e.g. proprietary sleep-promoting drugs, atropine for G.I. symptoms, antihistamines, anti-Parkinsonism,

Table 2
Features of Primary Open-Angle Glaucoma

Prevalence: 0.5% of adults above age 40 years

Symptoms	**Signs**
1. Nil	1. Raised IOP
2. Blind Spots	2. Optic Nerve Damage
3. Restricted Side Vision	3. Visual Field Defects

Associated Systemic Conditions: Diabetes, Hypertension, Dysthyroid Disease, Anemia, Alcoholism

anti-psychotic or vasodilators and sympathetic stimulation (e.g. emotional upsets) or the use of systemic adrenergic drugs (e.g. vasoconstrictors, central nervous system stimulants, appetite depressants, bronchodilators and hallucinogenic agents). It is an acute painful condition and raised IOP may damage the optic nerve unless the pressure is relieved quickly. However, many patients may get subacute attacks, with complaints of blurred vision or halos, much earlier. The raised IOP causes corneal edema and the patient notices halos or rainbows around the lights due to scatter effect.

Infantile Glaucoma is a form of childhood glaucoma in which obstruction to aqueous outflow is due to a development abnormality of the anterior chamber angle. It is usually diagnosed at birth or shortly thereafter and most cases are recognized in the first year of life. Table 4 shows some of the features of infantile glaucoma.

Table 3
Features of Angle Closure Glaucoma

Prevalence:
Rare, 10% to 20% of all glaucomas.
History:
Acute onset; age above 50 years.
Symptoms:
Pain
Halos
Visual Loss
Nausea
Emesis
Clinical Signs:
Conjunctival Injection
Corneal Edema
Mid-dilated unreactive Pupil

Table 4
Features of Infantile Glaucoma

Incidence:
1:10,000 births
Symptoms:
Photophobia, Lacrimation, Redness
Signs:
Corneal Edema, Conjunctival Congestion,
Enlarged Eyeball (Buphthalmos)
Raised IOP, Optic Nerve Damage

Secondary Glaucomas follow certain ocular disorde or occur in association with some systemic diseases. Th basic fault here is the blockage to the flow or outflow aqueous humor. The patient may get symptoms of pri ary open angle or closed angle glaucoma depending the underlying pathology. Some of the secondary gla comas of interest to the general practitioner will discussed. The causes of secondary glaucoma are show in Table 1.

A. *Corticosteroid-Induced Glaucoma*. A substanti percentage of the general population will develop el vated IOP when treated with prolonged topical or sy temic steroids. Certain individuals, particularly patien with primary open-angle glaucoma, first degree rel tives of these patients, myopes and diabetics are at greater risk of developing increased IOP when treat with corticosteroids. The pathophysiology of decreas outflow in steroid-induced glaucoma appears to be d to accumulation of mucopolysaccharides in the drai age angle.

B. *Non-Steroidal Drugs and Glaucoma.*[11] Some dru may precipitate angle-closure attacks and cause elev tion of IOP in patients with open-angle glaucoma.

1. Phenothiazines

These agents have alpha-adrenergic and cholinerg blocking actions and either action may predominate any one drug. The former is seen with chlorpromazi with which miosis occurs and the latter occurs with mo phenothiazines. Their actions may be enhanced if us in combination with monoamine oxidase (MAO) inhib tors and the tricyclic antidepressants. Prochlorperazi (Compazine) and promethazine hydrochloride (Phe ergan) may also produce idiopathic lens swelling. Th can precipitate angle-closure glaucoma in suscepti individuals.

2. Tricycle antidepressants

Their anticholinergic action is much stronger that th of phenothiazine. Indeed, amitriptyline (Elavil, Amitril imipramine (Tofranil) and protriptyline (Vivactil) all m cause mydriasis in normal use.

3. Monoamine oxidase inhibitors

The main danger with these drugs is that though th have weak anticholinergic action, they may enhance th effects of other medications like phenothiazine, tricycl antidepressants, anti-Parkinsonian drugs and sympath mimetic agents (amphetamines and ephedrine).

4. Antihistamines

H_1 antihistamines have a sedative effect, an antichol nergic effect and local anaesthetic properties. An acu overdose may precipitate an atropine-like toxic sta with fever, flushed face and dilated pupils which coul exacerbate glaucoma. Promethazine hydrochloride m cause an idiopathic swelling of the ocular lens. H_2 anti istamines limit their action to H_2 receptors and are n known to have any ocular side effects at the prese time.

5. Antiparkinsonian drugs

These may be divided into two groups: 1) Agents tha replenish the diminished stores of dopamine in the cor

s striatum (caudate nucleus and putamen) and 2)
;ents that have strong anticholinergic action. The drug
the first group is Levodopa which increases sympa-
etic tone and dilates the pupils. When used in con-
nction with MAO inhibitors, the sympathomimetic
tion of Levodopa may be increased precipitating an
ute angle closure glaucoma. The agents of the second
oup also may aggravate angle closure through their
ong anticholinergic action.

6. Minor tranquilizers

Minor tranquilizers do not appear to have autonomic
tivity but one case of angle-closure glaucoma follow-
g the use of diazepam (Valium) has been reported.

7. Sedatives and stimulants

The sedatives like barbiturates, paraldehyde, mor-
ine, meperidine, reserpine, mephenesin and phe-
ytoin appear to lower the IOP. However, the
mulants including amphetamines, caffeine and
ethylphenidate (Ritalin) do cause a transient rise of
P in patients with glaucoma.

8. Antispasmolytic agents

Antispasmolytic agents reduce gastric secretion and
otility due to their anticholinergic actions. They may
ise IOP in glaucoma patients.

9. Sulfa drugs

Acetazolamide (Diamox) is a well-known sulfa deriva-
e used to reduce IOP in glaucoma patients. Sulfa
ugs in general can also cause idiopathic swelling of
ular lens resulting in shallowing of anterior chamber,
yopia and acute angle closure. The action seems to be
e to toxic effect on the lens.

10. Antiarrhythmics

Digitalis reduces IOP through the reduction of the
-K ATpase activity in the ciliary processes. Quinidine
es not appear to have any effect on IOP. However,
sopyramide phosphate (Norpace) through its anticho-
ergic action may precipitate an attack of angle closure
aucoma.

11. Vasodilator agents

The nitrates may cause pupillary dilation and thus
duce an acute angle closure glaucoma. However, in
en angle glaucoma patients, the vasodilators do not
em to affect the IOP significantly.

12. Vasoconstricting agents

These drugs through their alpha adrenergic agonist
tion may dilate pupil size and thus precipitate an acute
gle closure glaucoma.

13. Sympathomimetic agents

These agents reduce IOP, but because of their dilating
fect on the pupil may bring on an acute angle closure
aucoma.

14. Anesthetic agents

General anesthetics like halothane and methoxyflu-
ne lower the IOP. However, two agents—
ccinylcholine and Ketamine, elevate IOP due to
creased tone of the extraocular and orbital muscles.

15. Antihypertensive agents

These agents usually have no effect on the eye. A new
pha-adrenergic sympathomimetic drug Clonidine
(Catapres) however, can cause pupillary dilation. Other antihypertensive agents (e.g. Chlorothiazide, Hydrochlorothiazide, polythiazide, chlorthalidine, hydralazine and hexamethonium, spironolactone and trichlormethizide) have been documented to cause idiopathic swelling of the lens which might induce an acute angle closure glaucoma in predisposed patients. Glaucoma patients who develop hypertension have had a kind of balance in perfusion of the intraocular optic nerve. If the systemic blood pressure is suddenly reduced even the controlled IOP may suddenly press on the optic nerve and cause damage. It is essential therefore to decrease systemic pressure slowly in patients with glaucoma.

16. Hormonal agents

During progestational phase of menstruation and in pregnancy the IOP decreases. Systemic progesterones reduce IOP in glaucoma patients. Estrogens, however, seem to raise the IOP.[13]

17. Acetylsalicylic acid (aspirin)

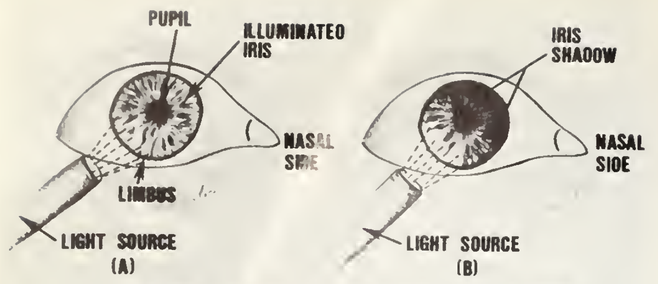
Some of the ocular effects of aspirin may be idiopathic swelling of the lens, myopia, shallowing of anterior chamber and IOP elevation.[14] Therefore, one has to be careful if the patient complains of blurred vision following the use of oral aspirin.

Summary

Glaucoma is a leading cause of blindness in the U.S.A. Optic nerve damage is usually irreversible but patient's remaining vision can be retained indefinitely with proper medical care. Risk factors to look for are shown in Table 5. Many drugs can aggravate or precipitate an attack on angle-closure glaucoma in susceptible patients. General physicians may find it useful to screen all patients for narrow angles by the oblique penlight or flashlight test. (Figure 3.)

Table 5
Recommendations For Early Detection of Glaucoma Patients

1. IOP and eye checkup should be stressed to all patients with diabetes, hypertension, dysthyroid disease, anemia, alcoholism, and long-term steroid users.
2. Patients with the following symptoms should get ophthalmologic consult: halos or rainbows around lights, dimness of vision and ocular pain in the evening.
3. Patients above 40 years of age and those with positive family history of glaucoma should get their eyes checked regularly.
4. General physicians may detect shallow anterior chamber by doing oblique flashlight test (Figure 3) on all elderly patients in whom glaucoma is suspected, or those receiving glaucoma inducing drugs. Hold a penlight at the limbus of the eye (where the sclera joins the cornea) and note whether the light shines across the anterior chamber, fully illuminating the iris or is partly blocked by forward bowing of the iris and therefore unable to illuminate the nasal side of iris as in a patient with shallow anterior chamber. Such a patient should be first evaluated by an ophthalmologist.



OBLIQUE FLASHLIGHT TEST (A) NORMAL EYE SHOWING ILLUMINATED IRIS SURFACE (B) SHALLOW ANTERIOR CHAMBER WITH IRIS SHADOW DUE TO BOWING FORWARD OF IRIS

FIGURE-3

Acknowledgements

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Psychiatric Disorders

Angel Dust: Medical and Psychiatric Aspects of Phencyclidine Intoxication

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Introduction

Phencyclidine (PCP) was originally made in 1957 fc use as a general anesthetic, and was known for its exce lent analgesia.[1] Patients on whom it was used describe their bodies as being very far away or "disconnected and unable to feel pain. However, it was removed fror the market in 1965 due to its causing a wide range c psychiatric disorders postoperatively, including hallucinations, echolalia, delirium, violent behavior, an mania.[2-4] PCP is still marketed to veterinarians for use i sedating animals in the wild that are being markec Although PCP has been banned from the market, it ha emerged as one of the most commonly abused illici drugs in the United States. Its ability to cause psychiatri disorders as well as physical manifestations is very challenging to the physician. Despite its widespread use, PC abuse continues to be underdiagnosed in offices, emergency rooms, and psychiatric institutions across th country.

Prevalence

PCP is easily synthesized by any "backyard chemist' from peperidine and cyclohexane.[6] It is therefore easil accessible for "dealers." It also is potent in smal amounts and therefore easy to conceal. The most common way it is used is by sprinkling on marijuana o oregano and then smoking it, with response in one t five minutes.[5] It also can be snorted, ingested, or mainlined, although smoking it avoids many of the undesirable side effects. It is amazing how PCP can end up i

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eet drugs were sampled for PCP,[7] and of these 184 7%) contained PCP. It has been sold under different mes such as LSD, Cocaine, PCP, Horse, Hog, etc. ecause of its high prevalence, it is being claimed by any as “a nationwide epidemic,”[6] and the DEA has cognized it as second to heroin in the need for ntrol.[5]

fects on Sensorium

PCP is used for its ability to produce a high—a uphoric and dissociative effect. Graeven and Sharp[8] terviewed 200 PCP abusers in Northern California. hen asked why they used PCP, the most common sponse was “to feel high, to feel pleasure,” and then ey went on to describe altered perceptions in time, ace, and body image. In 1959 Luby did a controlled udy of PCP effects in nine normal volunteers and nine sychiatric patients (seven schizophrenics and two per-onality disorders).[9] All of the patients described three hases of drug effect. In the first phase proprioception as “scrambled” with patients describing their limbs as eing 20 miles away. They felt depersonalized, and tried interact with people seen in pictures. In the second hase they were observed to have schizophrenic signs: ought blocking, echolalia, word salad, and the inabil-y to do serial 7's or abstraction. In the third phase they resented with lethargy, apathy, and hostile affect. Four f the relatively compensated schizophrenics showed gnificant looseness of associations and inappropriate ffect up to six weeks after testing. Rosenbaum, et al. ompared changes in attention, motor function, and roprioception between chronic schizophrenics and ormal subjects on PCP, and found that both groups ere similar.[10]

Beede reports that Luby noted a similarity in response sensory isolation between people intoxicated with CP and schizophrenics. He goes further to hypothesize hat there is “a common deficit in the screening of ncoming perceptions.”[4] This theory still seems valid oday in that patients with acute intoxication cannot be talked down,” as is done with LSD abuse, since this rovides sensory input which only serves further to dis-rient a person on PCP.[4]

sychiatric States

PCP provides a definite challenge to the clinician ecause it can mimic a variety of psychiatric disorders. earlson[5] recognizes five possible psychiatric states nduced by PCP. The first is intoxication; a state asso-iated with most of the morbidity and mortality, this tate is usually not seen by the physician until it's too late. eople have hanged themselves, murdered their own hildren or neighbors, drowned in the shower, and died n automobile accidents when intoxicated.[4,11]

The second psychiatric state, acute delirium, is proba-ly the most common state seen by the physician. It resents as an acute delirium lasting from three to eight ours. Some of the reported symptoms and signs are mpaired attention/concentration, visual hallucinations, nd violent behavior. The third presentation of PCP ntoxication is prolonged delirium lasting up to weeks.

Finally, PCP can cause symptoms identical to those observed in mania or schizophrenia. The manic state is entirely different from the euphoric state in acute intoxication and responds to lithium and/or neuroleptics.[13] Pearlson also discloses having seen cases where PCP initiated the first episode of mania in patients who had a family history of bipolar disorder.

PCP induced schizophrenia is also seen and lasts past the half life of the drug. There is no reference in the literature as to the amount of PCP intoxication needed to cause this or mania. It usually responds to neuroleptics. As stated previously, Luby, et al., induced relapse of symptoms in schizophrenics in remission with PCP. PCP has been shown to initiate schizophrenia in previously normal people who had a positive family history of schizophrenia.

McCarron[19] used a different classification on 597 patients seen at Los Angeles County Hospital that had used only PCP, and found the following to be the four major patterns accounting for two-thirds of the patients: Coma (9.2%), catatonic syndrome (14.6%), toxic psychosis (16.8%), acute brain syndrome (26.6%).

There have been attempts to use PCP as a model for studying schizophrenia. Beede and Pearlson each cite studies which have shown that PCP acts on the thalamus, midbrain, and sensory cortex to inhibit dopamine reuptake (consistent with the biochemical model of schizophrenia), acts as a false transmitter to inhibit cholinergic transmission, and blocks uptake of serotonin and norepinephrine. PCP does conform to the neurotransmitter theory of schizophrenia as far as dopamine is concerned, but does not account for schizophrenics who have normal dopaminergic pathways. It does allude to the fact that there may be dopaminergic pathways not yet found in the brain which are involved in schizophrenia. PCP's effect on other neurotransmitters (serotonin, acetylcholine) also indicates that there may be a pathway not yet scrutinized which uses these transmitters, and which is central to the etiology of schizophrenia. Finally, there could be a neurotransmitter not yet found which is commonly affected in schizophrenia and by PCP.

Diagnosis

The first step in diagnosing PCP use is to increase our index of suspicion, especially with younger individuals who present with an acute delirium or psychosis, along with acute medical symptoms and signs. An enlightening study was done by Yago, et al. at Los Angeles County Psychiatric Hospital Emergency Room during a 48 hour weekday period. Of 145 blood samples, 63 (43%) were found to be positive for PCP (14%). Yago goes on to say approximately one-third of patients positive for PCP admitted PCP use, and another 20% admitted drug use but denied PCP. Yet in only 21% of these cases was PCP (and/or other drugs) considered when seen by the physician. This study demonstrates how prevalent PCP can be in acute care settings and yet misdiagnosed.

Presentation to the physician can vary significantly as was previously discussed. Out of 1,000 cases of PCP intoxication seen on the prison wards at Los Angeles County Hospital, nystagmus and hypertension were the most commonly reported signs, occurring in only 57% of patients.[20] Yago found 19 different presenting symptoms and signs with auditory hallucinations (77%) and sleep disturbance (68%) being the most common. These two studies demonstrate the wide variety of presenting symptoms and signs which can be complicated by concurrent use of other drugs, contaminants, trauma, amount and route of PCP, underlying medical problems, individual variation to susceptibility, or tolerance.[20]

In a patient who presents with psychiatric symptoms in whom it is not clear whether or not PCP was taken that presents with psychiatric symptoms, the differential should include sepsis, neoplasm, head trauma, other street drugs, and functional schizophrenia. In helping to differentiate the above, Yago looks for five signs seen in non-comatose patients when screening patients for PCP intoxication: 1) nystagmus, 2) hypertension, 3) pyrexia, 4) dissociative states, 5) hyperreflexia.[14]

After a mental status and physician exam (with emphasis on neurologic findings), if there still is a high degree of suspicion for PCP use, the urine or blood should be screened for PCP. PCP is a very lipid soluble, and therefore has short peak blood levels of 50-200 ng/ml one to four hours after inhaling it.[14] Radioimmunoassay screening of serum or urine is good to use in an early stage, and is sensitive in detecting levels down to 10 ng/ml or less.[15] In addition, it is able to pick up 11 of the 30 analogs of PCP. There is also the advantage to this test that no expensive machinery is needed.

After the first couple of hours of PCP use, it is difficult to detect in the serum since it is quickly removed from the blood and stored in organs high in lipids (such as the brain).[16] Over time, PCP seeps out of these stores in small amounts to be excreted in the urine. PCP is also harbored in the body for a long time due to the fact that it is alkaline and that it remains circulating in the enterohepatic circulation. Some theorize that this sequestration is the reason for the waxing and waning of its effects long after the half life of the drug. Gas chromatography, using glass capillary columns is much better where a low level of PCP is suspected since it can detect it all the way down to 5 picograms/ml.[14]

Medical Complications and Treatment

Numerous complications have been recorded from PCP intoxication such as intravascular sickling, hemiparesis, myoedema, hyperuricemia, hypocalcemia, hyperkalemia, and rhabdomyolysis, causing acute renal failure.[5] Most of the medical complications are treated symptomatically.[19] Unfortunately, symptomatic treatment cannot be strictly followed since treatment of PCP intoxication has not yet been completely standardized due to some contradictions in the literature, as well as some of the poorly understood effects of PCP. These exceptions are covered below.

In managing the acute psychosis, minimal sensory input is needed due to the patient's deficit in senso feedback.[25] The following is suggested:[5]

— a quiet room, neither bright nor dark
— minimum of external stimulation
— approach in a calm and reassuring manner
— diazepam for severe anxiety or assaultivene (10 to 30 mg p.o.)
— try to avoid restraints, since this can enhance t possibility of rhabdomyolysis,[12] and therefore possib acute renal failure.

Next, since PCP is basic it can be trapped in urine wi a pH of 5.0. This may be done by administering cranber juice, or ascorbic acid 1 to 2 grams per day p.o. Ammc nium chloride 2.75 mEq/kg in 60 ml in normal saline b nasogastric tube, or 2 gm/500 dextrose IV can be given i the comatose patient.[4] Urinary acidification should b avoided if salicylates or phenobarbital are present Once the urine pH is low enough, diuresis should b initiated with furosemide 20 to 40 mg. One study ind cates a 25 fold increase in PCP clearance with an aci diuresis.[17] Yet skeptics disagree feeling that only 10% t 30% of the drug can be cleared with acid diuresis. Gastric lavage also is suggested if within six hours c ingestion followed by 0.3 mg sodium sulfate for catha sis,[4] although there is still disagreement on this.[5]

Without a doubt, most of the mortality is from "behavioral toxicity" resulting in suicide, homicide, or acc dents.[21,22] Although extremely rare, the hypertensiv crisis leads to intracranial hemorrhage.[23,24] It is felt b some clinicians that when PCP use is detected, th patient should be admitted to ICU for blood pressur monitoring,[24] while others feel the patient may leave a soon as all symptoms/signs are gone except for nystagmus.[19] The hypertension should be treated with Diazo ide, Hydralazine, Propanolol, or Nitroprusside. The us of Chlorpromazine or Haldol is still controversial sinc some feel they can lower the threshold and precipitat hypotensive crisis,[5] whereas others advocate their use needed.[4]

Finally, high serum levels of CPK have bee observed,[26] and even though there is disagreement as t the etiology (direct toxicity versus increased moto activity), there is complete agreement as to its potenti in causing acute renal failure, with some cases appearin in the literature.[27] The classic picture is high CPK value orthotolidine-positive urine, hyperphosphatemia hyperuricemia, and hypocalcemia. When this picture i present, acidification of the urine to enhance PCP elimination is contraindicated since this can potentiate nephrotoxicity of the myoglobin.[28] Instead, therapy should b geared toward rhabdomyolysis and preventing acut renal failure. Uric acid nephropathy can also occur, an therefore if hyperuricemia is present they should b started with hydration, alkalinization of urine, an allopurinol.[29]

PCP intoxication can be extremely dangerous. T date, no one has been able to show a correlatio between the serum concentration and adverse effects Rather, the serum concentration needed to produc ese complications is extremely variable, as well as the mplications themselves.

mmary

PCP use has quickly grown in popularity throughout e country and is now of epidemic proportions. ecause there is no "classic" presentation, it will conue to be underdiagnosed until a heightened level of vareness is attained by physicians. With our advances drug screening, it can be diagnosed not only more curately, but also days to weeks after its use. It is hoped at an antidote will be found for PCP that would not nly confirm diagnosis more quickly, but also reverse e drug's effects, just like Narcan acts on opiates. The edical complications are usually treated symptomatilly, although there still is controversy in some areas as ave been discussed. As we further our knowledge of CP, we must also use it more in our differential to event underdiagnosis and avert the possible tragedies presents to the individual patient and society as a hole.

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Surgery

Outpatient Inguinal Hernia Surgery Using Local Anesthesia

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Introduction

Physicians and patient-consumers have become properly cost-conscious. Surgeons are called upon to minimize hospital stays, either by planning surgery for the day of admission, or increasing the use of outpatient surgery facilities. With this in mind, I began a pilot project to assess the routine use of local infiltration anesthesia on outpatient surgical management for patients with inguinal hernias. In the past, I utilized local anesthesia for inguinal hernia repairs in patients who were unstable from a cardiopulmonary standpoint. These patients always did well postoperatively and, in fact, seemed to have fewer of the "standard" complications such as excessive postoperative pain, nausea, urinary retention,

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constipation etc. that patients complain of, following conventional general or spinal anesthetics. The purpose of the pilot project was to test the benefits and limitations of the outpatient local anesthetic technique on all candidates for inguinal hernia repair, regardless of their cardiopulmonary status. This paper outlines a two-year experience (which includes the initial pilot phase) during which time the outpatient, local anesthetic technique has become my standard technique. Results have been uniformly satisfactory. Hopefully, more surgeons will consider this valuable technique, for the benefit of their patients.

Clinical Data

This is a consecutive series of seventy-one patients with eighty-one inguinal hernias, operated between August, 1982 and August, 1984. Of the 81 hernias, ten were bilateral, ten recurrent and three chronically incarcerated. Bilateral inguinal hernias were always repaired simultaneously, never staged. None of the patients with recurrent hernias had been previously operated on by the author. The patient characteristics are shown in Table 1.

Table 1
Characteristics of Patient Population

Number of patients:	71 (66 males, 5 females)
Number of hernias:	81 (76 males, 5 females)
Types of hernias:	10 bilateral, 10 recurrent, 3 incarcerated

Age range of patients:	**%>/60 years**	**%>/65 years**
Males:		
22 - 83 (average age: 57)	38/66=58%	27/66=41%
Females:		
41 - 84 (average age: 63)	3/5=60%	3/5=60%

Patients converted to general anesthesia: 3/71 (4%)

*One patient was not given standard supplemental intravenous narcotic and barbiturate supplementation, two were anxious but not feeling excessive pain.

Preoperative Preparation

All the patients are carefully informed of the planned surgical procedure during the preoperative office visit. The points, during the procedure when some discomfort is likely, are stressed and in a sense, rehearsed. These points are: a) The initial skin infiltration with Xylocaine. b) Discomfort when the spermatic cord is mobilized. c) Occasional pain when the electrocautery is used to control bleeding in a spot not specifically anesthetized. d) Placement of the local anesthetic prior to making a relaxing incision, when the latter is needed. The importance of the time spent explaining and forecasting the procedure cannot be overstated for its value in allaying fear and permitting a smoothly conducted surgery. This would be impossible if the patient were tense or uninformed in the operating room. If possible, the spouse or other postoperative assistant is present during the discussion, and questions covering the postoperativ course are also discussed.

Surgical Technique

The surgical technique has been well-described b others.[6,11,12] Bassini-type repairs and Cooper ligamen repairs were used, based on individual hernia characte istics. The use of local anesthesia in no way limited th choice of repair, or the technique used. It was ofte surprising that a very extensive dissection and repa could be performed without discomfort, via a short inc sion on the awake, alert patient.

A transverse skin incision, measuring approximately cm. is placed about a centimeter above the pubic tube cle. The inguinal exposure is excellent, as the underlyin tissues are extremely mobile. The external oblique apo neurosis is opened for only 2 to 3 cm. This allows mor than adequate exposure of the inguinal canal. Othe have noted that gentle handling of tissues and sma incisions are fostered by the use of the local anestheti technique.[2,4]

The cautery is used sparingly to avoid possible patie discomfort. For femoral hernias and for a few of th larger direct hernias, a Cooper's ligament repair is use Otherwise, a repair based on the ileopubic tract and th shelving edge of Poupart's ligament is used. Of course, complete dissection of the internal ring and the floor c the inguinal canal is always performed. There has bee no difficulty in performing the surgery under local anesthesia, even when bilateral Cooper's ligament repai were done. The external oblique aponeurosis is alway closed over the spermatic cord.

Following surgery, patients are allowed to leave th hospital promptly. All patients are seen in the offic between the second and the fourth postoperative day Activity is encouraged immediately. An ice pack is mai tained on the wound for 48 hours, when the patient resting. Many patients return to light work within tw days of surgery. Patients are started on a stool softene prior to surgery and are given a prescription for oral pai medication. Total operating room time is about on hour for unilateral hernias; one and one-half hours f bilateral hernia repairs.

Anesthetic Management

A standby anesthesiologist is available for eac surgery. The anesthesiologist administers 2 cc. of fentanyl and 5 to 10 mg. diazepam intravenously prior to th surgeon's instilling the local anesthetic. Additiona intravenous supplementation (diazepam, fentanyl, pentothal, meperidine) is only occasionally necessary fo particularly anxious or medication-tolerant patient Despite the intravenous supplementation, the patien generally remains awake and conversant throughout th procedure. Indeed, the patient's ability to Valsalva i utilized to test the repair.

One percent Xylocaine with 1:100,000 Epinephrine i used to locally infiltrate the skin along the incision line One percent Xylocaine without Epinephrine is used i all the deeper layers. No attempt is made to perform field block. The amount of Xylocaine required is consid ably less than most references on the subject sugst,[1,10,12] less than 20 cc. total being the rule. Usually 5 to cc. is used for the skin and another 4 cc. for the deeper sues. If a relaxing incision is needed, the aponeurosis nfiltrated with Xylocaine prior to using the cautery for e relaxing incision. Otherwise, as noted by Bowen,[2] e deeper tissues are surprisingly insensitive. Excessive iltration serves only to distort the operative field.

sults

The results have been uniformly excellent. No patient d the common genitourinary problems particularly sociated with bilateral hernia repairs in elderly men.[8] o patient experienced urinary retention. All patients th prior surgical experience stated that they preferred e local anesthetic technique to their previous expeence. All patients were discharged from the operating om to their homes, with the exception of five patients %), who lacked any postoperative assistance and for nom hospitalization was arranged. Each of these tients left the hospital within twenty-four hours. It was cessary to convert three patients to a light general esthetic, two because of anxiety, one because of dismfort. The patient who experienced discomfort had t received the standard intravenous supplementation. ese patients were discharged to home immediately llowing surgery.

scussion

Because of a cost-conscious public and third-party yment systems, attention has been focused on techques which achieve a satisfactory outcome with minal expense. The concept of outpatient inguinal hernia rgery being performed under local anesthesia is not w but is consistent with current trends. In 1955, Farquna[5] reported on 485 patients operated under local esthesia. Bowen[2] believes that the local anesthetic chnique has been underutilized and used a combinaon of peripheral nerve block plus local infiltration on 7 patients, as part of a larger series of patients, who also ceived a general or spinal anesthetic. Lichtenstein[7] xploded the myths" surrounding inguinal hernia pair and recommended the routine use of local anesesia but not necessarily on an outpatient basis. Other rgeons have been less enthusiastic about these chniques.*

This paper reports a consecutive and unselected series outpatient inguinal hernia repairs performed under cal anesthesia. There have been no postoperative mplications, unless the decision to convert three tients to a general anesthetic is considered a complition of the technique. In these instances, the proceire could have been completed as planned, but it emed pointless to prove the point when the alternae of a light general anesthetic was available. More to e point is that there were no pulmonary, gastrointestil or urinary tract complications frequently noted, pecially in elderly males, following inguinal hernia rgery.[8] No patient experienced postoperative urinary equency or retention. There is no requirement to main in bed and patients are ambulatory without assistance, within a few minutes of the end of the procedure and are discharged from the surgical facility to their homes. There has been no nausea or other emergence phenomena as is common following a general anesthetic.

There has been no need for injectable analgesics in the postoperative period. These findings are underscored by the 20% morbidity and 1% mortality following elective inguinal herniorrhaphy in patients greater than 65 years old.[8] To underscore the point, 54% of the patients in this series are 60 years or older and 30% are greater than 65 years. As noted by others,[2,4] the conduct of the procedure, under local anesthesia, encourages a delicate technique with more attention to detail than may be the norm under general or spinal anesthesia. This is probably because of the potential for immediate desultory patient feedback under local anesthetic, if the surgeon is rough or causes pain. I have found that well-placed incisions can be made much shorter than the norm and still provide excellent exposure. An important feature of this technique is that the surgeon can verify the integrity of the repair by asking the patient to strain, cough, or perform the Valsalva maneuver.

Contrary to several reports, including a contribution from the executive business literature,[3] simultaneous bilateral hernia repairs are well-tolerated and need not be staged. Ten patients in this series had bilateral hernia repairs, without excessive discomfort during or following surgery.

A controversial point is whether an anesthesiologist is needed. I prefer the assistance of a standby anesthesiologist who can induce general anesthesia if necessary and who can be independently responsible for the administration and monitoring of short-acting narcotic and barbiturate supplements if necessary. Others have felt the anesthesiologist's role either redundant[1] or specifically unwanted.[4]

As noted by Lichtenstein,[7] the techniques for the administration of local anesthesia for inguinal hernia repair, as found in the literature, are needlessly complex.[2,9] There is no need for a field block. Only a small amount of local infiltration is necessary. Additional local can be administered, guided by the comfort of the patient as the procedure progresses. It has been unusual to use more than 20 cc. of local anesthetic. As little as 6 cc. has been used with appropriate titration of intravenous supplements to keep the patient alert and pain-free.

A survey of 281 hospitals in the western United States in 1981, revealed that the average postoperative hospital stay, following inguinal hernia repair, varies between three and six days, depending upon associated diseases.[9] The average hospital charge at Tucson Medical Center for inpatient inguinal hernia repair in 1982, was in excess of $1,450 with an average length of stay of 3.08 days. The hospital charge for the identical procedure, performed under local anesthesia on an outpatient basis, at Tucson Medical Center is $450. The significance of the cost savings of $1,000 per patient, extrapolated over the number of inguinal hernia surgeries performed in a year, is quickly apparent. Bowen[2] has made a similar calculation and estimated a national savings in excess of $350,000.00 annually.

There is enormous pressure on doctors to streamline hospital care and costs. This pressure comes from peer review as well as the private business sector.[3] Tables 2 and 3 outline advantages of the outpatient hernia repair using local anesthesia. This approach has become my uniform technique. I endorse it for others to use, without reservation.

*See Mosenthal, W.T. in discussion of reference No. 2.

Table 2
Advantages of the Technique of Outpatient Surgery Under Local Anesthesia

1. Ability to test the repair with an alert patient in the O.
2. The patient is ready to leave hospital immediately.
3. Immediate resumption of routine activities in norma home surroundings.
4. No periods of confusion, as often occur following general anesthesia, in the elderly patient in the unfamiliar hospital environment.
5. Immediately resume regular diet.
6. No postoperative nausea or other phenomena, relate to emergence from general anesthesia.
7. No postoperative urinary complications.
8. No postoperative pulmonary complications.
9. Inexpensive.

Table 3

Misconceptions	Misconceptions Corrected
1. Large and dangerous volumes of local anesthetic are required and only marginal pain control is achieved.	It is rare to require more than 20 cc. of 1% Xylocaine.
2. The standby anesthesiologist "snows the patient" and, in effect, administers a general anesthetic.	Very small doses of short-acting analgesics and sedatives are used. The patient remains awake and conversant.
3. Patients require large amounts of pain medication postoperatively.	There have been no injectables given. Patients receive acetominophen with codeine.
4. Patients are so anxious and uncomfortable during the procedure that the cardiac risk is excessive.	There have been no cardiac complications.
5. Patients will prefer to be asleep during surgery and to have the asylum of the hospital setting postoperatively.	This statement is uniformly incorrect on both counts.

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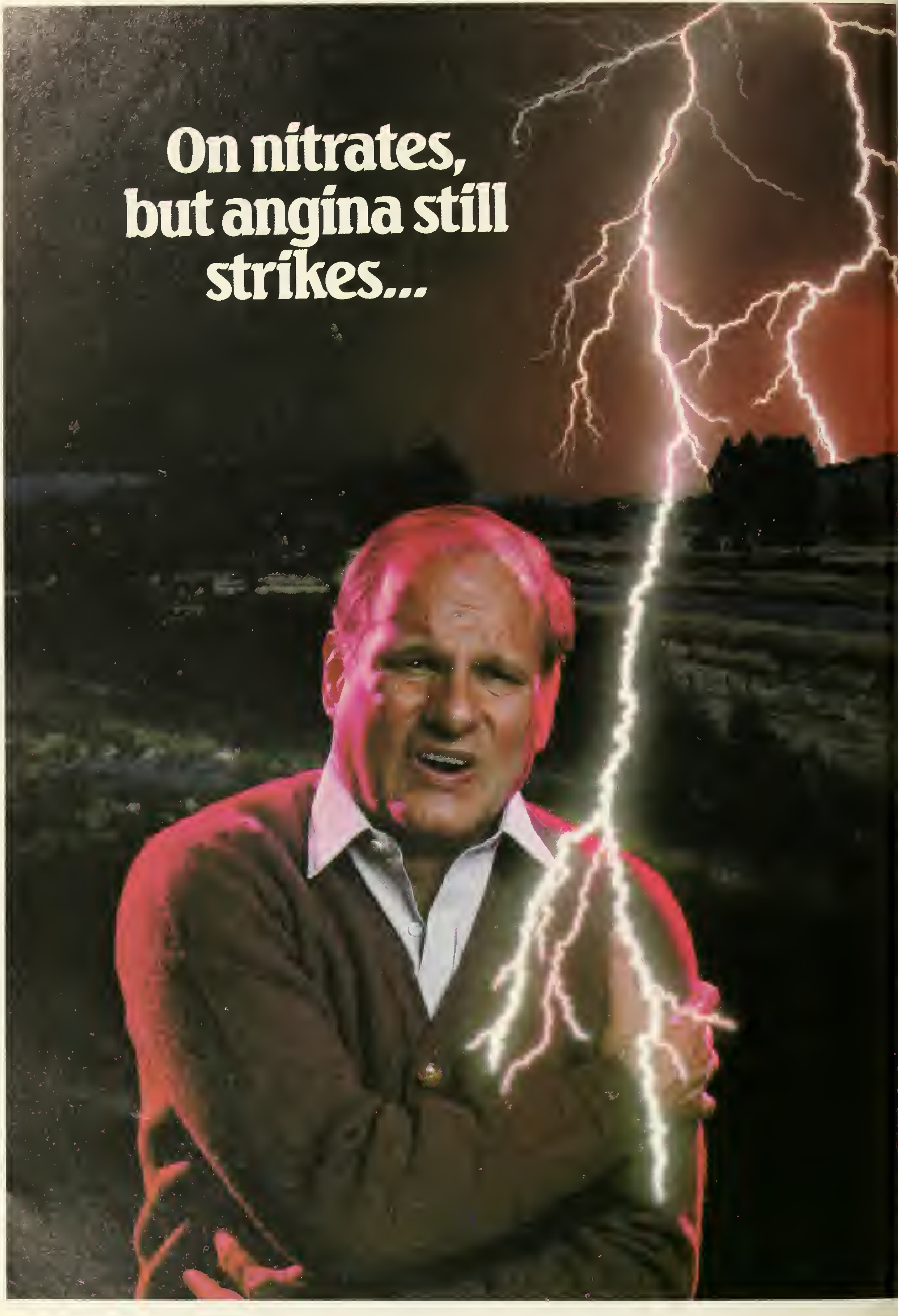
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Special Article

Women in Arizona Medicine: Mary Lawson Neff, M.D.

Part II

Virgil Hancock, III, M.D., M.P.H.

Legislation requires interest groups or strong public pinion in order to be adopted. Eugenic and mental ygiene programs were usually advocated by superinendents of state institutions for the mentally disabled, ne medical profession, social workers, the nursing proession and educators. In general, Arizona followed this rend. The strong ties between the elected officials and ne superintendents of institutions, however, often nade the lobbying ability of these administrators weak. n particular, the political nature of the superintendent's osition at the Arizona State Hospital made this office a weak and unstable platform for lobbying the legislature. A. C. Kingsley, the superintendent of the hospital during nost of 1910, also was not a strong believer in eugenic neories. By 1916 increasing awareness of the problem of ne mentally deficient in the state prisons led superinendents of correctional institutions—the state prison nd the Ft. Grant industrial school—to call for the use of ntelligence tests as a screening procedure for inmates. Recommendations included screening children in Arizna's public schools as well as the prisoners. Prevention oncepts discussed ranged from educating children in ne importance of being aware of the hereditary background of a future spouse (early sex education) to segreating all feebleminded women of child-bearing age. By ne early 1920s surveys of school superintendents and ounty physicians demonstrated a strong concern about ne problem of the feebleminded and support for an nstitution. In 1922, an article in *The Arizona Teacher and Home Journal* complained that "by far the greater part f the teacher's time and effort" was given to help the etarded pupil.[14]

Representing the state medical association, Neff was ne key advocate behind bills introduced in the 1917, 919 and 1921 legislatures to establish a training colony for the feebleminded. Training colonies were considered the most advanced treatment institution on the east coast and were aimed at increasing the functional level of the individual to promote as much self-sufficiency and productivity as possible. Following the defeat of the two earlier bills, her 1921 effort received additional support from a special visit by V. V. Anderson, an internationally known psychiatrist and one of the leaders of the National Committee of Mental Hygiene, who spoke to the Rotary Club, the Maricopa County Medical Association and, most likely, the legislature. He came to Arizona as part of the national campaign of the NCMH to promote the development of mental hygiene programs in the states. Arizona was one of a handful of states without an institution for the feebleminded. Despite this support as well as that of many of the state's social workers, women's groups, teachers and physicians, the legislation was defeated by a legislature intent on limiting public expenditures. The financial priority in 1921 was the construction of Arizona's highways, a program which would obviously enhance the state's development.[15]

A concurrent resolution, however, allowing the NCMH to conduct a survey on mental deficiency throughout the state was passed. This survey was part of the NCMH program of surveying all the states to understand the problem of mental disorder and encourage the development of new programs. These surveys were financed by the Rockefeller Foundation which played a leading role in the development of public health programs and clinical medicine in the United States before the 1930s. Since the Foundation would pay for all the survey's expenses, the legislators had no problem in passing the resolution. It was hoped that the information in these surveys would facilitate the passage of state legislation dealing with the problems of the mentally ill. By 1921 many eastern states and cities had been surveyed. An important factor in these surveys since 1916—when Aaron J. Rosanoff conducted the influential Nassau County Survey which explored the relationship between mental disability and criminal behavior—was to focus on mental deficiency and social problems like crime, prostitution and dependency. Neff, who had shared the speaker's platform with Rosanoff at a lecture a decade earlier, was named by Arizona's Governor Campbell to the surveys' task force and was a key coordinating member of the Arizona Mental Hygiene Survey of 1922 which also emphasized the relationship between feeblemindedness and social problems.[16]

The Arizona Survey was conducted by Thomas Haines of the NCMH and was centered on the problem of mental diseases outside of the state hospital. Institutions surveyed included children's homes for orphans, juvenile courts, the industrial school, county facilities, the state prison as well as a survey of 8,000 public school children in a search for the feebleminded child. The problem of mental deficiency on the Indian reservations and in the Hispanic community was also of special interest. The survey also stressed the relationship between

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heredity and mental disability. Haines complimented the state's physicians for being "unusually alive" to the problems of mental disease. The findings of the survey, in the tradition of the infamous Juke and Kallikak families of the east coast, included a number of multigenerational families in Arizona with a history of feeblemindedness, crime and dependency. In a speech to the state medical association, Haines, stressing the "negative eugenic" effects of these large families, stated "community control of the breeding of the unfit is the clearly indicated goal to which Arizona should work in the future."[17]

Other findings and recommendations included that of the 10,343 surveyed, 487 had a diagnosis of borderline mental defect; 441 were diagnosed as feebleminded; 472 with psychopathic personality; 76 with mental disease; 12 with epilepsy and only 20 with psychoneuroses! The recommendations suggested the establishment of a state board of mental hygiene which would oversee all mental health services; the appointment of a psychiatrist as a commissioner of mental hygiene; a state training school for mental defectives (the legislation Neff was trying to pass); the psychiatric examinations of any individual charged with delinquency or a crime; and increased communication between the proposed department of mental hygiene and the public school system. For Haines, the state hospital should be "the most potent agency in the state for preventing mental disease." Social workers, increased parole programs, outpatient clinics and extra-mural care were also to be stressed. He especially emphasized that political consideration should be removed from the appointment of a superintendent to the hospital and that the superintendent should be a qualified psychiatrist. Despite the comprehensive nature of the study, the results and recommendations failed to address the practical issues like the fiscally conservative stance of the state legislature and the limited resources which were likely to be applied to such a program presuming some type of legislation could be passed.[18]

What happened following this survey provides an embarrassing case history in the development (or lack of it) of public mental health services in Arizona as well as a contrasting example to the provision of facilities for people with tuberculosis. Five years after the survey was completed, the legislature passed a bill in 1927, establishing the Arizona Children's Colony. No provisions for mentally retarded adults were made in the bill thus ignoring both Neff's and Haines' suggestions. Even though the bill was passed over the veto of Governor Hunt, a democrat, no major appropriation was made for the colony. In 1929, the legislature appeared well on their way to making the eugenic dreams of the Progressives come true when both a small appropriation for land was made to the colony and Arizona passed a sterilization law for state hospital patients believed to have hereditary disorders. This law was passed after the only physician member of the state body made a stirring speech both explaining the legislation and citing the problems caused by the Jukes and the Kallikaks as re sons for the legislation. By 1935 only 20 patients had be sterilized and only a few more were sterilized in t 1950s, making the law essentially inoperative.[19]

Neff, who also supported the sterilization measu had left Arizona many years earlier. In 1925 she moved Los Angeles where she continued her teaching and le turing activities. In 1929 she wrote to the Governor Arizona, John Phillips, who sent her copies of the tv bills. Given the seeming change in public sympat towards eugenics and mental hygiene in Arizona, sl wondered if she might not have left the Grand Cany State at the wrong time. What followed the next fe decades showed that, if her major concern was to be ir state which was more sympathetic to mental heal issues, the timing of her departure was appropriate.[2

The conservatism of the legislature with regards to tl funding of programs for the mentally disabled w intensified by the financial problems of the Gre Depression. By 1937 no further allocations for the colo had been made. During this year, a bill to add funds the colony was introduced. Many legislators felt strong enough about their vote to ask that their position l recorded in the House journal (the House passed th legislation only to have it defeated in the Senate). Or representative began his defense for his vote *in suppo* of the appropriation by stating, "I haven't gone so gentlemen..." Legislators who voted against the appropriation all stressed that the institution would mea increased taxes "upon the backs of the home owner, th farmer, the rancher, the business man and all industry Despite the general sympathy towards the *Spirit* of th bill, one legislator stated the issue succinctly: "I was se to the legislature to reduce taxes and not to increas them."[21]

The following year, 1938, however, proved to be th critical year for the backward mental health system i Arizona. Grover Kempf, a psychiatrist who had just completed a nationwide study of mental hospitals for the U S. Public Health Service, came to the state at the reque of the Governor to examine the state hospital. Kemp was not as diplomatic as Haines in his report whic lambasted the state hospital for the disaster that it ha become due to the lack of appropriations by the legislature and the political nature of its administration. Criticizing everything about the hospital from th overcrowding to the burial of the dead, this repo initiated the rumblings of change in Arizona. The repo related directly to the care of the feebleminded in Arizona since, because of the failure to create the Children' Colony, many were committed to the state hospital. A editorial in the Arizona Republic sums up the indignation and anger felt by many in the state about the provisions for the care of the mentally disabled.

"No Arizonan can see the unspeakable filth an revolting sanitation conditions at the hospital and b proud of his state. After seeing it, he can only reach on conclusion—that is that the real 'nuts' in the state are no in the hospital but are those who do the voting an

electing of officials.''[22]

This report encouraged the legislative changes of the 940s. Following the sensationalizing of the conditions at he hospital public support became united on resolving ome of the problems. One of the earliest steps which vas lauded as a serious attempt to address the political problems of the appointments was the passing of a bill changing the manner of appointments to the state board of control which ran the hospital. In 1941, the Arizona Children's Colony received additional funds. As a result of the post World War II economic expansion, in 1947 and 1949 enough appropriations were made to the colony to provide funds for the construction and eventual operation of the facility.

Are there relevant conclusions from this study in Arizona medical history for today? Besides the obvious realization that the issue of costs and the public provision of medical services is not a new issue, can anything be gleaned from this episode in the politics of Arizona health care? I think that there are many clues within this study as to the success or failure of public health programs and medically related legislation. Perhaps the biggest "secret" to be explored involves the relationship of medical issues to other mobilizing value systems of a community besides taxes and money. "But rather than elaborate upon that epigrammatic statement, I will leave t to the reader to sort out, and perhaps try to piece ogether, the clues among these curious fragments of Arizona's medical history."

Thirty-two years had passed since Mary Lawson Neff irst promoted a bill to care for Arizona's mentally etarded.[23]

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(Continued from Part I)

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Briefly Noted

James E. Bertz, M.D., Scottsdale, has been elected to the Board of Directors of he American Board of Oral and Maxillofacial Surgery.

Richard K. Brooks, M.D., Phoenix, has been elected to the Board of Directors of St. Joseph's Hospital and Medical Center.

Richard L. Collins, M.D., Scottsdale, discussed arthroscopy on ArMA's November *Health Highlights* cable elevision program.

Terry L. Due, M.D., Phoenix, has been named Chief of Surgery at Humana Hospital-Desert Valley. Other new department chairmen include: **Allen Stone, M.D.,** Scottsdale, Chief of Pediatrics; **Donald J. Kuban, M.D.,** Director of Pathology; **Richard C. Strand, M.D.,** Director of Radiology; and **Fred D. Miller,** Emergency Department.

Robert S. Eliot, M.D., Phoenix, was a featured speaker at the October Sun Institute presentation, "Your Heart: Owner's Maintenance Manual." Dr. Eliot also discussed Stress Management on ArMA's October *Health Highlights* cable television program.

Gerald D. Wolfley, M.D., Scottsdale, was recently named 1984-1985 President of the medical staff of Scottsdale Memorial Hospital-North. **Wilfred M. Potter, M.D.,** Scottsdale, will serve as Secretary-Treasurer.

The Arizona Medical Association welcomes the following new members:

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Psychiatry
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University of Arizona - 1975

Paul Pisarik, M.D.
Family Practice
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No. 202, Tucson
University of Illinois - 1981

Robert A. White, M.D.
Family Practice
2550 East Fort Lowell Rd., Tucson
Universidad Autonoma, Juarez - 1982

John J. Wild, Jr., M.D.
Orthopedic Surgery
5402 East Grant Road
Building C, Tucson
University of Arizona - 1977

John D. Wilkinson, M.D.
Family Practice
2001 West Orange Grove Road
No. 204, Tucson
University of Washington - 1971

Sherrylyn Young, M.D.
Obstetrics and Gynecology
5100 East Grant Road, Tucson
University of California - 1979

Yuma

Robert Albert Groves, M.D.
Neurological Surgery
2435 South Avenue A
Building C, Yuma
University of Alberta - 1961

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Pima

Betty Jo Tricou, M.D.
Psychiatry
Tucson Veterans Administration
Medical Center, Tucson
University of Chicago - 1955

Resident Members

Maricopa

Kenneth Geiger, M.D.
Orthopedic Surgery
Maricopa County Medical Center
University of California - 1984

Joanne Beth Gurin, M.D.
Internal Medicine
Good Samaritan Medical Center
State University, New York
(Downstate) - 1982

William J. Wood, M.D.
General Surgery
Veterans Administration
Medical Center
Emory University - 1980

William J. Wyatt, M.D.
Universidad Autonoma
de Guadalajara - 1983

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University of Arizona

Katrina Brendal
Lori L. Gross
Paul C. Magarelli

Affiliate Members

Yavapai

Harold Glenn Overley, M.D.
7951 East Siesta Lane
Prescott Valley
University of Cincinnati - 1940

We wish to make the following correction
for the error made in the October issue:

Allen Raczkowski, M.D.
Cardiovascular-Thoracic Surgery
1701 West St. Mary's Road, Tucson
Wayne State University - 1977

Motrin reduces inflammation, pain ...and price

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Contraindications: Anaphylactoid reactions have occurred in individuals hypersensitive to *Motrin* Tablets or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin iodides or other nonsteroidal anti-inflammatory agents.

Warnings: Peptic ulceration and GI bleeding, sometimes severe, have been reported Ulceration, perforation and bleeding may end fatally An association has not been established Use *Motrin* Tablets under close supervision in patients with a history of upper gastrointestinal tract disease, after consulting ADVERSE REACTIONS. In patients with active peptic ulcer and active rheumatoid arthritis, try nonulcerogenic drugs, such as gold If *Motrin* Tablets are used, observe the patient closely for signs of ulcer perforation or GI bleeding

Chronic studies in rats and monkeys have shown mild renal toxicity with papillary edema and necrosis Renal papillary necrosis has rarely been shown in humans treated with *Motrin* Tablets.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported If these develop, discontinue *Motrin* Tablets and the patient should have an ophthalmologic examination, including central visual fields and color vision testing.

Fluid retention and edema have been associated with *Motrin* Tablets, use with caution in patients with a history of cardiac decompensation or hypertension In patients with renal impairment, reduced dosage may be necessary Prospective studies of *Motrin* Tablets safety in patients with chronic renal failure have not been done.

Motrin Tablets can inhibit **platelet aggregation** and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and on anticoagulant therapy

Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, skin rash, weight gain, or edema.

Patients on prolonged **corticosteroid therapy** should have therapy tapered slowly when *Motrin* Tablets are added.

The antipyretic, anti-inflammatory activity of *Motrin* Tablets may mask inflammation and fever.

As with other nonsteroidal anti-inflammatory drugs, borderline elevations of liver tests may occur in up to 15% of patients. These abnormalities may progress, may remain essentially unchanged, or may be transient with continued therapy Meaningful elevations of SGPT or SGOT (AST) occurred in controlled clinical trials in less than 1% of patients Severe hepatic reactions, including jaundice and cases of fatal hepatitis, have been reported with ibuprofen as with other nonsteroidal anti-inflammatory drugs. If liver disease develops or if systemic manifestations occur (e.g eosinophilia, rash, etc.), *Motrin* should be discontinued.

Drug interactions. *Aspirin:* used concomitantly may decrease *Motrin* blood levels

Coumarin. bleeding has been reported in patients taking *Motrin* and coumarin.

Pregnancy and nursing mothers: *Motrin* should not be taken during pregnancy or by nursing mothers.

Adverse Reactions: The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal of which one or more occurred in 4% to 16% of the patients.

Incidence Greater than 1% (but less than 3%)—Probable Causal Relationship

Gastrointestinal: Nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,* headache, nervousness; **Dermatologic:** Rash* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

Incidence less than 1%—Probable Causal Relationship**

Gastrointestinal: Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia, **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit, **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting; anaphylaxis, bronchospasm (see CONTRAINDICATIONS); **Renal:** Acute renal failure in patients with pre-existing significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria, **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

Incidence less than 1%—Causal Relationship Unknown**

Gastrointestinal: Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia), **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmias (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schonlein vasculitis; **Renal:** Renal papillary necrosis.

*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

**Reactions are classified under *"Probable Causal Relationship (PCR)"* if there has been one positive rechallenge or if three or more cases occur which might be causally related Reactions are classified under *"Causal Relationship Unknown"* if seven or more events have been reported but the criteria for PCR have not been met.

Overdosage: In cases of acute overdosage, the stomach should be emptied The drug is acidic and excreted in the urine so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis. Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d Do not exceed 2400 mg per day Mild to moderate pain 400 mg every 4 to 6 hours as necessary

Caution: Federal law prohibits dispensing without prescription MED B-7-S

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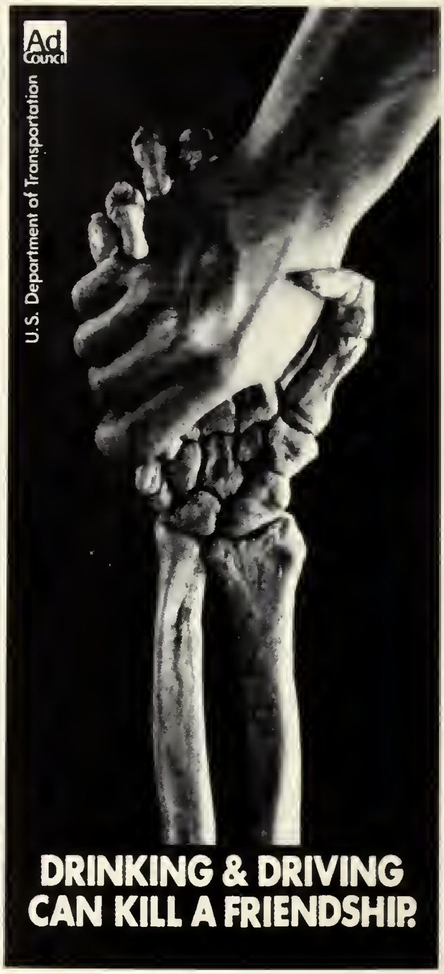
Upjohn
The Upjohn Company
Kalamazoo, Michigan 49001

J-4791 August 1984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Editorials

Charles and Beatrice: Seeing the Forest Instead of the Trees

It was that time, again, to call Charles and Beatrice in Florida. Their response to my previous editorials ranged from my mother's displeasure that I made her a year older than she really was (how was I supposed to know, she always was "39 years plus"), and I called her "simple" (she equated that with a moron), to my father's chagrin that I signed my name at the end of the editorial. "Everyone now knows who we are!" My phone conversations now have the aura of a reporter relationship with my mother, who asks before she talks, "Is it on or off the record?" I guess the ultimate insult that they experienced as fallout from my publicizing their exploits occurred while they were at a restaurant with us during a recent visit to Phoenix. A fellow physician, no doubt trying to make them feel welcome, stopped by the table and when introduced exclaimed, "So you're Beatrice and Charles! I feel I know you very well!" I cringed in my seat as he said it, for I knew they would misinterpret his motivation. Nothing was said about it that night, but the next day Charles came over to me and said, "You know, I've been thinking about what that doctor said." I responded with trepidation, "Yes?" "I really think it was mean of him to say what he did, he wasn't very nice!" I was therefore greatly relieved to learn later, that another physician who was going to come by, didn't because time did not permit introductions.

People to whom I've related these stories ask why I let my folks read the editorials. With limited introspection, I thought they would be pleased with the fact that I thought that what they had to say was important (what more could a parent want?), that their thoughts, in addition, had educational value to other physicians who would benefit from their wisdom (two immigrants, teaching a profession revered as God in their culture), and finally a bit selfishly, I wanted them to see some "fruit" from all their hard labors (our son the doctor). So much for Freud! I guess they couldn't see the forest for the trees, which brings me to the point of this editorial.

We need to look beyond our schedules for the day or the week, beyond the daily chores which drag us down. We need to see the bigger picture which is being painted which is changing the way we obtain and care for patients. This is an impassioned plea for those in this state to band together in endeavors which will strengthen us at local, county and state levels, and to resist those opportunities which seem to divide us. We need to bury past differences and trust those who want to help medicine survive. Several important organizational efforts are presently underway to offer industry and the public quality health care at a reasonable fee. These include Maricopa Foundation's Independent Physician Association, as well as a similar endeavor associated with the Pima Foundation for Medical Care. Both of these organizations are seeking to unite physicians in a plan which will enable them to compete successfully with ongoing closed panel groups as well as to forestall further erosion of the fee-for-service patient to incoming corporate HMO and PPO groups. The day of the independent practitioner who will be solely dependent on patients being referred from other physicians and patients will gradually, and then more rapidly, disappear. The same thing is happening at hospitals and they have been gearing up to keep their beds filled for some time. We, too, are going to have to do the same thing, and I believe it's better that we at least attempt to do it ourselves than end up being employees of others. Now is the time to see the forest instead of the trees.

Marshall B. Block
Editor

Hyperthermia Therapy of Cutaneous Cancer

The ideal treatment for skin cancer should be highly effective, be easily administered, have minimal morbidity and be inexpensive. The emerging biotechnology of hyperthermia therapy appears to satisfy these criteria.

It has been known since the early 19th century that malignant tumors are susceptible to increased temperatures. Several theories are proposed to explain this phenomenon. The first suggests that hyperthermia induces the accumulation of nuclear proteins which restrict the rejoining of DNA strand breaks which in turn prevents DNA repair and subsequent cell death. Another theory states that hyperthermia damages the malignant cell plasma membrane causing increased permeability and leakage of cell contents. A third theory combines the first two and suggests that heat induces plasma membrane damage which results in subsequent nuclear damage.

There are four methods by which cutaneous hyperthermia may be delivered. The simplest is hot water bath immersion. It is impractical because of the very minimal depth of heating and the difficulty in localizing the heat to the lesion to be treated.

The remaining three methods require high energy waves produced by passing electric current through an oscillator. Depending on the frequency of the wave form, ultrasound (0.2-3 MHz), radiofrequency waves (0.5 - 13.5 MHz), or microwaves (905 - 2450 MHz) are produced. All of these methods can produce heat in excess of that needed to kill most cutaneous tumor cells. Ultrasound can produce the localized heating required but, unfortunately, in a non-uniform pattern. Radiofrequency hyperthermia localizes the heating in a highly reproducible and uniform pattern but with poor depth penetration. In superficial cutaneous neoplasms, this is an advantage since normal deep structures are not affected by the heat energy. Microwaves are not well suited for cutaneous tumors because they cannot produce localized heating of discrete lesions.

There are a number of factors which influence the effectiveness of hyperthermia in cancer treatment. Perhaps the most important is the level of temperature. For most tumors temperatures of at least 42°C are required for cell death. Very high temperatures (>50°C) are effective but cause vascular thrombosis and delayed healing. Other factors such as reduced tumor tissue pH, metabolic depletion, reduced vascular supply and hypoxia are not effective alone, but enhance the effect of hyperthermia to cause cell death.

Many clinical studies have used hyperthermia alone or in combination with chemotherapy/radiation therapy in deep-seated tumors but few human studies have addressed the issue of skin cancer treatment. This is the logical site for hyperthermia treatment because localized heat can be effectively delivered to the tumor without damage to surrounding tissue. With deep tumors, it is difficult to heat the tumor sufficiently and spare vital surrounding structures.

Several promising animal studies of cutaneous malignancies suggest the potential usefulness of cutaneous hyperthermia. Cancer eye of cattle is a common low grade squamous cell carcinoma of the eye. In a large series, Kainer, et al. obtained a 91 percent long-term regression after a single treatment with radiofrequency hyperthermia. Recently we have treated twenty human squamous cell carcinomas implanted on athymic nude mice with a single dose of localized radiofrequency hyperthermia and produced a 100% regression which lasted at least 12 weeks. There was minimal morbidity and excellent wound healing in all animals.

These studies show the potential of hyperthermia in the treatment of cutaneous malignancies. The technology is available for further animal and human trials. These will soon commence at the Arizona Health Sciences Center.

Norman Levine, M.D.
Associate Professor of
Internal Medicine (Dermatology)

Louis J. Kettel, M.D.
Dean, College of Medicine

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Editor:

I agree with your past editorial positions on Chiropractic. Your thoughts are well-conceived, your words are well-chosen, and your suggestions are appropriate. Here's a vote of support!

Scott Crawford, M.D.

Editor:

How Healthy is Arizona Health Care?

How much "wellness" can you afford in Arizona? All of us want to be healthy, but is the expense we pay to stay or become healthy worth it? These are the questions being asked by governmental agencies, employer groups, individuals, and anyone paying for "wellness." They want to know what they are getting and how they can improve what they are getting for their dollars. They need to know what to add and what to delete. They are no longer willing to accept merely "what the doctor ordered" as the final determining factor.

The medical community itself needs to know how it compares with other communities. Are the citizens satisfied with the outcome? Is the community accepting the cost of the medical services?

Arizona is now a hotbed of medical unrest. Therefore, it is more important now than ever before to analyze our situation and take appropriate action. How do we do that? The most overworked and poorly understood terms we use to evaluate medical care are *Quality Assurance* and *Utilization Review*. The words are interpreted differently depending upon your starting point. At best they are relative from individual to individual. A state of "health" is interpreted differently to a diabetic than to a marathon runner. Quality Assurance has been looked at from many viewpoints. Good office records, happy patients, long periods without malpractice claims, expensive services, availability of physicians, accessibility of physicians, satisfied feeling, etc., have been suggested in determining quality of care.

The tools reviewers use also vary considerably. Some determine wellness as having normal laboratory studies or being capable of performing physical tasks. Patient surveys and comparisons with other providers have also been implemented with varying degrees of success or failure.

Economic indices have been extrapolated to determine proper management of health care. Both under- and over-utilization patterns using cost comparisons have been studied. Over-utilization is the result when costs are considered too high. Patient dissatisfaction is the outcome of reduced care, the result of withheld services.

The recent changes in the Medicare law and attempts by the states to find an alternative to Medicaid demonstrate governmental concern with health care on a national as well as a local level. Hospitals are required to perform case review in an extensive manner. *Never* before has anyone done analysis on medical delivery from the *physician's office*. However, times are changing. Government, employers, insurance companies and individuals are now seeking methods to analyze and compare physicians' office care for the purpose of assuring the "quality" of that care.

Our organization is required by law to review the medical care administered by our physicians in an office setting. The mechanics of this review were left to our own ingenuity and devices.

Consequently, we have designed a Quality Assurance, Utilization Review, Peer Review committee to determine the efficiency and quality of health care delivery to our patients. The committee meets every two months in different areas of the state. Members consist of medical doctors, doctors of osteopathy, family physicians, specialists, metropolitan doctors, rural doctors, a pharmacist, nurses, administrators, and various invited guests. All discussion except peer review is conducted in open session. Names of patients and providers are withheld. Office records of the cases to be reviewed are sent to committee participants several weeks in advance along with a notice of protecting confidentiality. The cases are presented by the reviewing physician to the committee. Substantial discussion follows, culminating with a recommendation to the attending physician. These discussions focus intensively on medical intervention at the procedural level, desired standards of practice, and clinical outcome for the patient. Cases are selected in several manners. Some are from random selection. Others pertain to a specific study such as high prescription utilization. Still others result from a special request because of a known problem. Each case is summarized and a report sent to the physician. Afterwards, a general summarization of all cases reviewed is published in a newsletter distributed to all providers of the organization.

Subsequent sessions set aside a short period of time for follow-up reports and notes received from the previously reviewed physicians.

Although committee members are not awarded the same legislative protection for peer review that hospitals currently enjoy, designs are underway to fill this gap in the near future.

Admittedly, this process is a long way from providing an in-depth look at the determination of quality health care and patient satisfaction. However, it is a step in that direction. For the first time, office based physicians are cooperating with an outside review organization in an attempt to document good health care. It also allows a governmental agency, employer, or individual to have some feedback as to what he is getting for his medical dollar. We encourage Arizona physicians to cooperate with programs designed to improve quality of care and permit objective review by the consumers supporting our profession.

Gerald Marshall, M.D.

Editor:

I have stood quietly on the sidelines observing your editorial confrontation with the chiropractors. Since you yourself wish to "keep the fires burning," I feel obligated to express the viewpoint of the physical therapy community. We certainly have some interest in this issue as we provide care to the same type of patient with musculoskeletal and soft tissue impairment who might choose to seek care from a chiropractor.

In answer to your original rhetorical question you posed, "Are we being manipulated?" I think you can now answer that question as you have in part done through your subsequent editorial in *Arizona Medicine*, (September 1984). Yes, you were "manipulated," a common problem when anyone, individual or profession approaches the chiropractor. I, too, had access to the chiropractic journal in which your editorial was paraded like some trophy bagged on the hunt, and then criticized alongside another article about the CAA Executive Director, "converting an M.D., too," through marriage. It was done in poor taste, and along with the enlightenment from your own colleagues, I'm sure it influenced the harsher stance you took in the subsequent editorial.

I would like to point out, as Dr. Howard Weinstein did in his letter, *(Arizona Medicine*, June 1984), that the medical profession has no need to embrace and turn to another group of practitioners for care of the patient with common musculoskeletal complaints. Physical therapists have been working with physicians for decades in providing excellent care in such areas as orthopedic rehabilitation, soft tissue injury care, and pain management including all forms of back disorders. If you have experienced the frustration of having one of your patients "converted" to chiropractic (Who said it was a cult?) or you simply would like a little more information about how a physical therapist can work *with you* in helping care for your patient's soft tissue problems, I would suggest spending a few minutes over lunch some day with a physical therapist to explore ways you can work together to help your patients. There is a very sizeable patient population who can benefit from this type of cooperative effort.

In conclusion, let me briefly update you on what has transpired over the past year and a half since physical therapists became somewhat more autonomous by being allowed to accept patients without a physician's referral. 1) At least 95% of patients cared for are still done so under physician referral; 2) you have not seen the billboards go up or the radio or TV spots soliciting our services with distasteful claims; 3) there have been no complaints or lawsuits over missed diagnoses or PT abuse. Physical therapists continue to provide an excellent level of care in hospitals, private offices, nursing homes, school districts or home health care environments and we continue to work as close as ever with others in the medical community.

Blair J. Packard, P.T.
President
Arizona Physical Therapy Association

Editor:

Dr. Block is courageous for editorializing affirmatively regarding chiropractic, however, from my perspective, I suggest that the prime distinction between it and medicine is manipulative practice, not primary care. It will be many years before chiropractors have gleaned their poorly trained membership (a self-admitted observation) and may, in numbers, compete in the primary health field. The scope of chiropractic practice remains an intensely debated legal issue.

The real problem transcends competitive providers and, in reality, concerns medicine's retrieving the indispensable, the *appropriate* musculoskeletal examination and comprehension of manipulation.

For whatever reason, during the 1800s, its use declined during a period that Oliver Wendell Holmes described that, "were the Pharmacopoeia thrown into the ocean, only the fish would be worse off." Osteopathy and chiropractic developed despite M.D. antagonism and both systems, principles aside, disgorged sufficient defectives to, on appearance, justify the attitude. During this period, however, an M.D., Alva Gregory, published a text on medical manipulative practices and pleaded with his colleagues to dispassionately study and improve the methodology. He also prophesied today's current schisms, were they to do otherwise.

Today, most physicians attempt to derive their musculoskeletal information from x-rays, yet one fact, above all, should impact them, that the spine is a *segmental structure* and all movement is a *summation* of reflex integration liable to mechanical dysfunction and dysreflexia. Nowhere, throughout the spine, is there unitary motion that justifies the popular notion that, since movements appear similar to the bending of a spring, it can be therapeutically approached from that conception. That fundamental error produces much of the confusion. How can accurate vocabulary and approach develop when basic anatomy is totally ignored?

Also, for lack of the diagnostic skills which attend manipulative practice, so-called "soft tissue injuries" are misunderstood. They aren't revealed on traditional studies, and only thermography, a new instrumentation, visualizes them. Regardless, when dysreflexias and mechanical dysfunctions co-relate, until interrupted, they can propagate each other indefinitely.

Why do we fail to teach our students how to palpate joints when individual restrictions are diagnosed only that way? Why is there any argument that the sacroiliac joint moves when it is palpable or that the sacrum is restrictable in a pathologic symptomatic position which may be relieved with manual procedures? Why has the failure of reconciliation of concept to anatomy, and practice to biomechanics produced such failures of diagnostic vocabulary? Why should attorneys be able to legitimately ask us, "How is it possible that a strain/sprain can last longer than it takes for soft tissue to heal?" And, of course, why do we answer that symptoms, after a "normal" period of tissue healing, are only "subjective," thereby unburdening ourselves?

We might as well acknowledge that one of the prime factors in the perpetuation of this abyss in care is that, in our system, we have accepted the myth that orthopedic surgery holds dominion over all musculoskeletal problems. Having accepted such a mantle, it is understandable they would attempt to maintain it, but nowhere in orthopedic *surgical* training is any comprehension of these method provided.

Quoting Robert P. Nirschl, M.S., M.D Chief Medical Editor, in *Orthopedic Today*, Volume 4, Number 4, (A Call t Activity):

> "Orthopedic medicine is statisticall a major segment of orthopedic practice With so obvious a practical reality, I am astounded that our orthopedic training programs offer so few opportunities fo residents to learn the concepts of orthopedic medicine, rehabilitation and fitness."

In the September, 1984 issue of *Orthopedics Today*, Robert E. Leach, M.D. orthopedic surgeon, was interviewed ir "The Thrill of Being Olympic Head Physician." In answer to a question concerning how the urgency of treatment of an athlete during the Olympics affected his clinical judgement, he answered:

> "I think that you're inclined to overtreat a little bit. You use more hands-on and massage and personal things than perhaps you do in your normal practice because you recognize the benefits of the hands-on, even the talking and the working of various muscles and so forth."

In that statement, he eloquently expresses the dilemma of a surgeon pounded to one mold yet cognizant of the conflict between his training and reality.

Most likely, physicians reading orthopedic surgical reports concerning vertebrogenic pain will observe the absence of such critical findings as the relationships of the pubic tubercules, the anterior and posterior superior spines and their relative movements, the relative mobility of the sacroiliac joints, the sacral position and movements, relative intervertebral motion, and other critical signs. The techniques are primarily the contributions of distinguished osteopaths.

It seems so simple, but the step to consciousness is enormous. As Charcot commented:

> "In the last analysis, we see only what we have been taught to see. We eliminate and ignore everything that is not part of our precedent."

Medicine's task is to reassociate with a craft whose loss has produced, in my experience, much devastation.

As example, I recently relieved a patient who, since prior to 1969, had, frequently and unpredictably, experienced severe precordial and upper extremity pain which was considered cardiac to the extent of documented payments from Transamerica Insurance exceeding $59,600. The emotional havoc within that family is incalculable. Her problem was a dysfunctional rib which, when irritated, fired the symptomatic dysreflexia. Diagnosis and cure were manual. In my series, I have rescued 14 other individuals from various degrees of investigation for coronary complaints who had spent up to five days in coronary care units but were cured with a manipulative procedure because their symptoms were of musculoskeletal origin.

Orthopedic medicine is emerging to reassert traditional medicine's responsibility.

The American Association of Orthopaedic Medicine, a new organization, is dedicated to restore, within traditional medicine, methodologies which advantageously attack the "aches and pains" problems which, though not life-threatening, are most common and materially affect the quality of life.

We have knowledge that, freed from prejudice, may lead to a clearer understanding of musculoskeletal injuries and how they may be more rationally therapeutically approached.

The 1985 annual meeting of the American Association of Orthopaedic Medicine will be held in Scottsdale, February 27 — March 3. All physicians are invited to register. The meeting is primarily clinical and a number of new advances will be presented.

Paul H. Goodley, M.D.
Founding President
American Association of Orthopaedic Medicine

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

GOVERNING COUNCIL

A meeting of the Governing Council of the Hospital Medical Staff Section of the Arizona Medical Association, Inc., and the Arizona Hospital Association Liaison Committee was held on Saturday, September 29, 1984, at the offices of the Arizona Medical Association.

Having previously received copies of proposed oral and maxillofacial guidelines being suggested by representatives of the Arizona Society of Oral and Maxillofacial surgeons and after considerable discussion, it was felt that individual hospitals appear to be resolving specific problems that arise directly with their own medical staff guidelines and further action is not necessary at this time.

The status of the initiative campaign was discussed and Dr. Bill Payne gave a summarization of the activities of Arizonans to Protect Quality Health Service (APQHS). There was agreement as to the increasing need for more contact by individual practitioners with their patients to explain the ramifications of all ballot issues. Rich Polheber suggested that attempts be made to communicate with large physician groups such as CIGNA which circulate newsletters to their entire patient population. Dr. Ward reported the physicians' speaker bureau is working well and in general the message being delivered is well received. Those who have seen the slide presentation prepared by the Arizona Medical Association uniformly agree it is extremely effective and should receive widespread notoriety. It was also suggested that a phone bank be set up prior to the election and Chic Older reported this is contemplated. Reid Wood expressed his concern that the elderly seem highly supportive of Propositions 110 and 200 and it was suggested that attention be focused on these groups because of their high voter turnout. Finally, it was recommended that both ArHA, ArMA, and APQHS do everything possible to address hospital medical staffs and educate them about the various propositions and their ramifications. It was felt that where possible practicing members of the medical staff should be encouraged to give these presentations.

Dr. Ward expressed his sentiment that while attention of the group has, so far, primarily focused on the November election the need for its continuation was great. He listed six issues which he felt, and all agreed, warranted further attention. These include:

1. Professional Liability - The continued availability of insurance; the interplay between physicians and hospitals; avoidance of a future crisis.
2. Sale of Non-profit Facilities - The appropriateness of not-for-profit hospitals supported by the community becoming for-profit-entities.
3. PRO's - The relationship of hospital medical staffs to the PRO; involvement on the Board of HSAG.
4. Medicare - Ramifications of non-participation by individual physicians in Arizona; effect that PPS will have on medical care practice.
5. New Provider Groups - Emergence of groups like MAYO and their relationship to the existing medical community.
6. Relationships with Board of Medical Examiners - The Physician's Health Committee and its future role.

Each of these issues was briefly discussed and it was strongly felt the present forum is appropriate and should be continued.

The next meeting of the group has been scheduled for Saturday, November 17, 1984, at 10:00 a.m. at the Arizona Hospital Association (please note this is a change of location.

EXECUTIVE COMMITTEE

A meeting of the Executive Committee of the Arizona Medical Association, Inc., was held at the Association headquarters, 810 West Bethany Home Road, Phoenix, Arizona, on Friday, October 19, 1984.

In response to questions raised by Dr. William Lovett regarding the procedures included under the Office Surgical Incentive Program established by Blue Cross and Blue Shield, Dr. Sherwood Denton, Chairman of Blue Cross and Blue Shield's Professional Committee, and Dr. Laurence Linkner, its Senior Vice President of Medical Affairs, addressed the members regarding the background and research that has gone into the preparation of the program initially, discussed briefly the current ability of many physicians' offices to be used for the surgeries indicated, and concluded that the procedures on the list would be reviewed to determine whether any could be deemed inappropriate.

The committee again discussed moving the ArMA Annual Meeting to June, noting the Auxiliary felt this was not desirable. Although meeting space for 1986 has been secured at the Doubletree Hotel in Tucson during April, Mr. Robinson was requested, prior to finalizing that contract, to make contact with all of the larger facilities in Tucson, determining availability as well as room rates for both months of April and June, and provide such information to the committee during its November 3rd meeting, so that a final decision could be made and a formal commitment entered into.

The committee received for information a report on response to our invitation to participate in the "YES on 301" campaign extended to various organizations; 10/1/84 correspondence from James A. Fein to the Attorney General and an update on the resulting activities by Edward Jacobson, Esq; a report on response to our offer to speak to various groups throughout the state and the success of that effort; results of solicitation of funds as of 10/19/84; 10/12/84 correspondence from Walter McClure, Ph.D., President of Center for Policy Studies; and a report by Dr. Baker regarding his request for AMA financial assistance for our campaign.

The committee then discussed at length the correspondence received from Kenneth V. Iserson, M.D., FACEP, relating to how ArMA might proceed following the November 6th election, agreeing that it was very important that the Executive Committee retain jurisdiction over any decisions which would ultimately have to be made immediately following the election and which would be greatly dependent on which, if any, of the health care propostions are passed by the voters. However, it was felt that input from the Governmental Services Committee might be helpful in making these decisions and determined that Dr. Iserson's letter be forwarded to that committee soliciting their thoughts.

The Executive Committee received correspondence from Dr. Louis C. Kossuth requesting the Association's submittal of four salt reduction resolutions during the 1985 Interim Meeting of the AMA. Following much discussion, it was moved and carried to correspond with Dr. Kossuth, thanking him for his interest in sodium control in the American diet and his efforts in that regard, but advising him that, since the AMA has previously taken a position in this matter and new evidence indicates that sodium may be only a portion of rather than the entire problem, the Association does not feel it appropriate to take a firm position until the matter has been fully studied.

The committee reviewed a request from the Arizona Family Planning Council for ArMA participation in a conference on abuse to be held in March of 1985 which would be further discussed with that group by Dr. Baker.

The committee was advised that, as of October 1st, ArMA has 148 direct members and, according to the bylaws, are entitled to delegates and alternates for the 1985 Annual Meeting but that the bylaws are silent as to how such delegates and alternates will be selected. Following a brief discussion it was moved and carried that the nominating committee, which will be meeting on Saturday, October 20, 1984, consider the matter of delegate and alternate selection for the direct members of the Association and determine how best this could be achieved for the 1985 Annual Meeting and that the Articles of Incorporation and Bylaws Committee be requested to draft a bylaws change to be considered during the 1985 Annual Meeting of the House of Delegates which would, in fact, outline a procedure to be followed by direct members of the Association for selection of their delegates and alternates in future years.

The response of the Arizona Chapter of the American College of Emergency Physicians to the Department of Public Safety Request for physician volunteers previously considered and forwarded on by the Executive Committee was received for information.

AD HOC INDIGENT HEALTH CARE COMMITTEE

A meeting of the Ad Hoc Indigent Health Care Committee of the Arizona Medical Association, Inc., was held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, October 20, 1984.

Albert W. Bostrom, M.D., AHCCCS Medical Director and member of the Committee, began his report with a brief discussion of perinatal mortality. He indicated that statewide data has been collected from all hospitals and will be reviewed to determine which cases were AHCCCS patients. Discussion moved to the need for ArMA to reactivate its Maternal Mortality Committee. Dr. Kelly indicated that it has been accomplished.

Dr. Bostrom distributed several items relating to Quality Assurance Plans and Grievance Procedures. A great deal of the discussion centered on physicians' responsibility under the Medical Practice Act to report physicians who are suspected of providing substandard care. Dr. Bostrom stressed that the AHCCCS Administration would investigate complaints but required more than anecdotal descriptions. The committee discussed ways in which physicians could report poor care and ways to streamline and simplify the patients' grievance process.

It was moved and carried that the committee recommend to the Executive Committee that the Arizona Medical Association publish a list of Medical Directors and Administrators of AHCCCS plan for the use of physicians who suspect improper care under the AHCCCS program. (see list below)

A summary of the proposed changes to AHCCCS rules and regulations which was prepared by the Arizona Hospital Association was distributed. It was noted that most changes were either technical in nature or dealt with eligibility.

Drs. Stein, Dandoy and Page reported on a proposal for an alternative to AHCCCS. The subcommittee was established to recommend a plan in the event that legislators, the Governor and the federal government would be open to suggestions for improving the three year AHCCCS experiment. The committee reviewed the proposal, point by point, and offered wording changes. It was suggested that the Governmental Services Committee receive copies of the Indigent Health Care Committee's proposal. It was moved and carried to thank the subcommittee members for their excellent work and to recommend to the Executive Committee of the Arizona Medical Association that it adopt the proposal for modifications to the AHCCCS program through a county health care system.

Dr. Bostrom suggested that Michael Clements, M.D., be invited to the next committee meeting to discuss ante partum patients who deliver without care.

MEDICAL DIRECTORS and ADMINISTRATORS

ACCESS Patient's Choice - 253-0890
222 North Central, Suite B101
Phoenix, Arizona 85004
Medical Director: Jerry Marshall, M.D.
Administrator: Lew Harper

Arizona Family Physicians - 274-6102
4041 North Central, Building B
Phoenix, Arizona 85012
Medical Director: James Hurley, M.D.
Associate Director: Peter Thomas, M.D.
Administrator: Stan Aronovitch

Comprehensive AHCCCS Plan - 779-336
121 East Birch Street, Suite 504
Flagstaff, Arizona 86001
Medical Director: William Finney, M.D.
Administrator: Linda Martin

Dynamic Health Services - 753-3636
3010 Stockton Hill Road, Suite D
Kingman, Arizona 86401
Medical Director: M. Azam Khan, M.D.
Administrator: Max Sedarat

El Rio Santa Cruz - 792-9890
839 West Congress
Tucson, Arizona 85745
Medical Director: Lionel Tapia, M.D.
Administrator: Juris Poncius

F.H.P. of NE Arizona - 537-4375
P. O. Box 425
Show Low, Arizona 85901
Medical Director: Ken Jackson, M.D.
Administrator: Bill Wade

Gila Medical Services - 473-4441
Claypool Medical Center
315 North Broad Street
Claypool, Arizona 85532
Medical Director:
Charles Bejarano, M.D.
Administrator: Paul Axinn

Graham County Doctors - 428-7801
1707 Thatcher Boulevard
Safford, Arizona 85546
Medical Director: Jack Bennett, M.D.
Administrator: Mike Contreras

Health Care Providers - 274-3949
3319 North Central, Suite C
Phoenix, Arizona 85012
Medical Director:
Robert W. Hamilton, M.D.
Administrator: Lawrence Filosa, Ph.D.

Maricopa County Health Plan - 279-1991
2601 East Roosevelt
Phoenix, Arizona 85008
Medical Director: Scott Smith, M.D.
Associate Director: James Willcox, M.D.
Administrator: Adolfo Echeveste

Mercy Care Plan - 285-3039
P. O. Box 2071
Phoenix, Arizona 85001
Medical Director: Don McHard, M.D.
Administrator: Barbara Benchoff

Northern Arizona F.H.P. - 634-2551
P. O. Box 276
Cottonwood, Arizona 86326
Medical Director: J. B. McNalley, M.D.
Associate Director: Thomas Peters, M.D.
Administrator: Bill Wade

Phoenix Health Plan - 252-7997
515 West Buckeye Road, No. 204
Phoenix, Arizona 85003
Medical Directors: Arthur Pelberg, M.D.
Albert Asendorf, M.D.
Administrator: Charles Kleinschmidt

Pinal General - 868-5841
P. O. Box 789
Florence, Arizona 85232
Medical Director:

Richard Standridge, M.D.
Administrator: Mary Fields
ima Health Plan - 573-2870
800 East Ajo Way
ucson, Arizona 85713
Medical Director: William Scott, M.D.
Administrator: Bill Leinbach
HS/Medical Care System - 333-2020
. O. Box 238
pringerville, Arizona 85938
Medical Director: Fred Hosler, M.D.
Administrator: Pat McCourt
University Famli-Care - 626-6992
Department of Family and
Community Medicine
Arizona Health Sciences Center
Tucson, Arizona 85724
Medical Director: Andrew Nichols, M.D.
Administrator: Elizabeth Temple
Western Sun Association/CHC - 782-4646
290 South First Avenue, Suite 300
Yuma, Arizona 85364
Medical Director: Gustav Bansmer, M.D.
Administrator: Jim DeFore

LONG TERM CARE MEDICAL DIRECTORS

Dynamic Health Services LTC Center - 753-3636
3010 Stockton Hill Road, Suite D
Kingman, Arizona 86401
Medical Director: M. Azam Khan, M.D.
Administrator: Max Sedarat
Maricopa Long Term Care - 275-9641
906 North 24th Street
Phoenix, Arizona 85008
Medical Director: Bruce Duffy, M.D.
Administrator: Emilio Reyes
Pinal Long Term Care - 868-5801
P. O. Box 789
Florence, Arizona 85232
Medical Director: Oscar Moreno, M.D.
Administrator: Mary Fields
Pima County D.I.A.L. - 573-2870
2800 East Ajo Way
Tucson, Arizona 85713
Medical Director: Stephen Cox, M.D.
Administrator: Bill Leinbach
Yuma Long Term Care - 782-6516
290 South First Avenue, Suite 300
Yuma, Arizona 85364
Medical Director: John Huston, M.D.
Administrator: Jim DeFore

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Rev. 10-15-84

Patient problems unresolved by Plans for their members to: **Mr. Brian Donnelly, Grievance Manager - 234-3655**

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE

A meeting of the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association, Inc., was held at the offices of the Association, 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, October 20, 1984.

The committee drafted three resolutions to be presented to the 1985 meeting of the House of Delegates which would 1) establish an office of Vice-Speaker of the House of Delegates; 2) change previous policy to provide that annual reports be forwarded through the Executive Committee (rather than the Board of Directors) to the House of Delegates; and 3) establish the Membership Committee as a standing committee of the Association.

The Committee received for information the Board of Directors' 3/27/84 concurrence with this committee's recommendation that no bylaws change be made with regard to Fifty-Year Club membership.

The committee briefly discussed the inconsistencies in the current bylaws dealing with direct member representation in the House of Delegates and it was determined that the matter would be placed on the agenda for the next meeting of the committee, allowing the Chairman sufficient time to review the bylaws and develop suggested revisions for the members' review and consideration.

NOMINATING COMMITTEE

A meeting of the Nominating Committee of the Arizona Medical Association, Inc., was held on Saturday, October 20, 1984, at the offices of the Association, 810 West Bethany Home Road, Phoenix, Arizona.

Minutes of the last two previous meetings of the Nominating Committee were distributed for informational purposes, since both contained discussions dealing with the concerns of selecting the best possible candidates for ArMA leadership. Dr. Earl Baker addressed the group regarding background on previous candidate selection, what appears to be a trend toward stronger leadership over the past several years and the need to continue to search for those demonstrating leadership qualities. A lengthy discussion ensued and it was agreed that, in addition to soliciting the county and specialty societies for any recommendations they may have, considering those currently on ArMA's Board of Directors, previous county medical society presidents, and committee chairmen or members, consideration be given to those physicians presently constituting the boards of directors of the two major county societies and those members who are currently participating as representatives to ArMA's Hospital Medical Staff Section. During the discussion, it was pointed out that a possible solution to involving more physicians who may have yet untapped leadership qualities in ArMA deliberations would be to invite all committee chairmen as guests to the quarterly Board of Directors' meetings and establishing on the agenda for those meetings a "Call to Guests" section.

The members were apprised of the fact that ArMA now has many direct members who are entitled to representation in the House of Delegates in 1985 and that the bylaws are silent as to how such selection should be made. Until a revision of the bylaws can be made, the Executive Committee, during its October 19th meeting, directed the Nominating Committee to determine how this matter should be dealt with. Following discussion of the matter, it was moved and carried that a mail solicitation be made to those direct members of the Association (as of October 1, 1984 — the Official cutoff date set forth in the bylaws), providing each member with a list of direct members, requesting that each select a number of candidates, returning their selections to the Association's headquarters, where the lists would be accumulated and tallied, forming the basis for a ballot which would then be circulated for the ultimate election of Delegates and Alternate Delegates to be their representatives at the 1985 Annual Meeting of the House of Delegates.

ENVIRONMENTAL HEALTH COMMITTEE

A meeting of the Environmental Health Committee of the Arizona Medical Association, Inc., was held on Thursday, October 25, 1984, at 810 West Bethany Home Road, Phoenix, Arizona.

Leland Fairbanks, M.D., explained the background for a proposal for a "Smoke Free Society by the Year 2000." He said the proposal was not intended for behavior in individuals' homes but deals with organized society in terms of public areas. The starting point of the plan will be "Smoke Free Hospitals."

Dr. Fairbanks stated that the Arizona Thoracic Society, the Maricopa County Medical Society, the American Medical Association and the Arizona Nurses Association have already endorsed the proposal and several other groups have it on their agenda for meetings this next week. The goal is to make Arizona the first in the nation to achieve a smoke free environment.

It was suggested that the Hospital Medical Staff of ArMA be called on to help implement the publicity involving the proposal. ArMA's fiscal commitment would be negligible since it would probably involve only printing and mailing costs. It was moved and carried to recommend to the Board of Directors that the Arizona Medical Association officially endorse the concept of working diligently to achieve "A Smoke Free Society by the Year 2000" and to make the supportive commitment to do everything possible to see to it that the smoke free society begins with "Smoke Free Hospitals" as the standard for the State of Arizona.

Lloyd Novick, M.D., Director of the Arizona Department of Health Services, briefed the committee on the issues the Health Department is working on and cited contamination of groundwater as their principal priority, followed by a number of problems relating to air and pesticides. A major item in the DHS budget is allotted to building up a better epidemiological situation. They are trying to strengthen the laboratory section and the disease control section in this area. Dr. Novick said his Department will ask for groundwater legislation this session. He also stated he would like to bring the state's environmental health problems before this committee for its consideration. In this regard it was moved and carried to recommend to the Board of Directors that Lloyd Novick, M.D., be appointed a member of the Environmental Health Committee.

Resignation of Norman James, M.D., was accepted by the committee. Dr. Spratling thanked everyone for their time and said meetings will be held on a quarterly basis.

EXECUTIVE COMMITTEE

A special meeting of the Executive Committee of the Arizona Medical Association, Inc., members of the ad hoc committee appointed by the Long Range Planning Committee to review ArMA's Physicians' Health Committee, and representatives of various other organizations, was held on Friday, October 26, 1984, at the Association's offices, 810 West Bethany Home Road, Phoenix, Arizona.

Dr. Ward briefly commented to the group on the cessation of the activities of the Physicians' Health Committee by reason of Arizona's mandatory reporting law, preliminary discussions with the Board of Medical Examiners which indicate that a joint effort to assist impaired physicians would be worth investigating and that Dr. Neff, as Medical Director of the OMA Monitored Treatment Program, and Mr. Ulwelling, Executive Secretary of the Oregon Board of Medical Examiners, had been invited to address this group on their efforts to reach similar goals. Dr. Neff and Mr. Ulwelling, first giving background information about themselves and their various activities, presented for the attendees, a most impressive and in-depth review of Oregon law and statistics relating to impairment guidelines and criteria for identification of, intervention with, and assistance to those physicians believed to be suffering from alcoholism or chemical dependency, and the ongoing efforts by the Oregon Board of Medical Examiners and the Oregon Medical Association to develop a working relationship over the past seven years to confront and solve these problems.

Guidelines for the OMA Monitored Treatment Program, together with a sample explanatory letter and physician agreement form were distributed for information.

Following a lengthy discussion and question and answer session, it was the consensus of the group that, although Arizona had a few unique problems which would need to be assessed and resolved, all other aspects for a joint effort between the Board of Medical Examiners and the Arizona Medical Association to develop a program for assisting impaired physicians were in place. It was agreed that discussions should continue between the two organizations with input from other interested and involved parties to establish a working relationship patterned after the Oregon example, which would, when achieved, accomplish the desired end, i.e., assisting physicians in gaining access to treatment for their impairment and return to an active practice and a fuller life.

MATERNAL AND CHILD HEALTH CARE COMMITTEE

A meeting of the Maternal and Child Health Care Committee of the Arizona Medical Association, Inc., was held on Saturday, October 27, 1984, at the offices of the Association, 810 West Bethany Home Road, Phoenix, Arizona.

Dr. Kelly, as the new chairman of the committee, extended thanks and appreciation to Dr. Scott for the several years during which he served as chairman, briefly reviewed for the new members background on the establishment of the committee and the duties with which it is charged and, following an introduction of attendees, proceeded to the business of the meeting.

Dr. Kelly updated the members on the activities of the Ad Hoc Indigent Health Care Committee in its efforts to assist in the development of quality assurance within the AHCCCS program and what is perceived by many members of this committee to be a special need for quality assurance as it related to the maternal and child health care delivered under that program. It was moved and carried that correspondence from the Maternal and Child Health Care Committee be directed to Drs. Schaller and Bostrom, as the Directors and Medical Director, respectively, of AHCCCS, requesting that more funds be channeled from the AHCCCS budget to establish more comprehensive quality assurance relating to delivery of Maternal and Child Health Care under the program, with emphasis being placed on 1) education of providers re: prenatal care; 2) development of guidelines for providers for assessment of high risk/low risk patients, especially those at risk for premature labor; 3) dissemination of information to provider groups of laboratory tests required or appropriate for prenatal care, as well education regarding which women ar candidates for premature labor and th signs and symptoms thereof; 4) follow-u care of high risk mothers; and 5) fundin of a family planning section within th AHCCCS program.

The committee discussed at gre length the activities of various organiz tions relating to prenatal education pro grams, the main focus of which identification of and education on th risk of premature labor. It was obvious t the attendees that, with the program which had been established, i.e., th "Healthy Mother-Healthy Baby Coali tion," a statewide newsletter, the volun tary hospital certification program, etc there was a major role which could b played by a coordinator of efforts to pre vent overlap of activities and optimun use of information and data.

Dr. Kelly first thanked Dr. Susong fo his tremendous efforts in gathering an reviewing materials related to materna mortality within the state and carrying o the activities of the Maternal Mortalit Committee, which has now resumed it function under the co-chairmanship o Drs. Burt Attico and Lou Weinstein. Whil the previous committee, by virtue of th records reviewed, had, in fact, seemed t improve care within the Indian Healt Centers, very little impact was made i private hospitals and there was concern a to how best to use the statistics when the were developed, for the purpos intended, i.e., reduction of materna deaths in Arizona. It was the conclusio of the members that cases should b reviewed, areas considered, and a summary written up by the committee i abstract form for dissemination throug *Arizona Medicine* or the DHS newslette *"Health Bulletin,"* thus apprising physicians and, in turn, the hospitals, of the gravity of the problem.

Discussion of statewide perinatal mortality and morbidity cases resulted in the assignment to the Subcommittee on Perinatal Health of the charge to collate these statistics, delineate groups of causes and periodically publish them in a selected statewide media (i.e., *Arizona Medicine*, a bulletin of the Arizona Perinatal Society, or the Health Bulletin published by DHS), along with educational commentaries.

The committee discussed the need to identify for Arizona physicians a reliable resource regarding the safety or hazards of drugs, toxic agents and environmental toxins and their effects during pregnancy and, in reviewing central information systems in the state, determined the most comprehensive and available was the Poison Control Center in Tucson, which is open 24 hours a day, 7 days a week. Dr. Lewis Shenker agreed to contact the Center to see whether they could provide this additional service through their already tablished program.

An update on the activities of the lay dwives in the state was given by Dr. um. He reported that DHS has now nployed a full-time lay midwife as Pro- am Manager; that they are in the pro- ss of discussing possible changes in me of the regulations governing the actice of midwifery, and that one of the ll most frustrating problems facing the ogram was in securing physician ackup as required under the regula- ons. It was determined that the commit- e should continue to be constantly formed on this subject, serve as a source when requested, and make such commendations which might become propriate.

The status of a DHS program for study- g birth defects in Arizona was reviewed. rs. Carlile and Clement identified a umber of problems ranging from a very mited budget to an insufficient number f investigators. It was determined that a ubcommittee, consisting of Drs. Britton, arlile and Shenker, be formed to evelop a plan of action and draft legisla- on for the establishment of such a regis- y in Arizona, for review by the ommittee at its next meeting. Such plan nd proposed legislation to be ultimately ubmitted to the Board of Directors and he Legislative Committee for approval nd support.

The recent growth of ethics commit- ees within several of the state hospitals, s well as the bioethics committee which omes out of the Kino Institute which ow serves as a resource and help group o many within the state were discussed at ength by the members. With the many thical decisions facing medicine today, it vas felt most appropriate that articles lealing with these issues and the need for thics committees to address them be repared for submission to *Arizona Medicine*.

A great deal of time was spent discuss- ng the fact that the Department of Health Services employs neither a part nor full time obstetrician and, by virtue of such absence, many health problems in the state cannot be adequately addressed. It was moved and carried to recommend to the Department of Health Services that ArMA's Maternal and Child Health Care Committee strongly supports the inclusion of an obstetrician within that department.

The subject of child abuse, its recent rapid growth, and the need to educate physicians regarding recognition and reporting, as well as more strict legislation and more funding to provide facilities and staff to care for those who have been abused was the subject of much discussion. Dr. Britton commented briefly on the "Child Abuse" program which ArMA was sponsoring on November 7, 1984, as a part of its "Current Perspectives" series and she agreed to provide for the next meeting of the committee responses to the program and any recommendations for legislation which she might have, as well as developing an article on this subject for Arizona Medicine providing names of physicians in Arizona who might be helpful in discussing this issue.

EXECUTIVE COMMITTEE

A meeting of the Executive Committee of the Arizona Medical Association was held on Saturday, November 3, 1984, in Room 2216 of the Basic Sciences Building at the U of A College of Medicine, Tucson, Arizona.

Dr. Novick reported on the most recent activities of the Department of Health Services which included, among other things, formulation of Department objectives regarding environmental health, preventive medicine, long term care, behavioral health, local health planning, and maternal and child health care and indicated that a draft of the finalized objectives, strategies, and time frames for each would, when prepared, be provided to the Association for its review. An update was also received on the recent spraying which occurred in Scottsdale, which affected a number of people, and which resulted in the Governor requesting DHS to work with the University of Arizona College of Agriculture to develop recommendations for protecting the public from pesticide spraying. Brief comment was also made by Dr. Novick on the Department's continuing interest in infant mortality, inadequate prenatal care, and teenage pregnancy, and that additional funds will be sought from the legislature to provide services in communities which currently have none; and the plan being worked on within the Department, which will require legislative cooperation for counties who presently have no mechanism for coordinating long term care to receive funding to assist them in doing so.

Following a review of the research developed by Mr. Robinson of various facilities in the Tucson area, relating to sleeping room as well as meeting room charges for the months of April and June, 1986, and a lengthy discussion regarding the desire to continue the Auxiliary's needs as well as ArMA's, and an attempt to again hold a meeting to provide stimulating presentations on timely issues and at the same time provide an enjoyable environment, thus drawing greater attendance, it was determined to defer action on the matter for a week to ten days.

The committee received additional items for the Board of Directors' meeting scheduled for November 3, 1984.

The October 8, 1984 correspondence from the Arizona Physical Therapy Association, Inc., expressing concern about fiscal kickbacks, the status of their profession and their relationship with medical doctors, was reviewed and discussed by the committee; and, it being the feeling that the matters related to a question of ethics, it was moved and carried that the October 8, 1984 correspondence from the Arizona Physical Therapy Association, Inc., be referred to ArMA's Professional Committee for its review and recommendation as to response or action to be taken by the Association with respect thereto.

The committee discussed the October 31, 1984 request from the Department of Corrections that ArMA establish a committee to serve as an advisory resource relating to health care provided to the inmates under state jurisdiction, and it was determined to take no action until such time as legal counsel could provide an opinion as to whether any question of liability might arise by virtue of such activity.

Future Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
 Lung Association
Walter O. Boswell Memorial Hospital,
 Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
 of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program,
 (THMEP) Tucson
University of Arizona College of Medicine,
 Tucson
Veterans Administration Medical
 Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

DECEMBER

Hospital Ethics Committees: Prospects and Problems
December 14, 1984, 12:00 noon-1:30 p.m. Arizona Health Sciences Center Auditorium, 1501 N. Campbell, Tucson, Arizona. Sponsored by Division of Social Perspectives in Medicine, Kenneth A. Hill Memorial Seminar. Contact: Lynne Mascarella, U. of A. College of Medicine. (602) 626-6173. Good for 1.5 hours of Category I Credit.

JANUARY

Second Annual Sports Medicine Symposium
Friday, January 19, 1985, The Registry Resort, Scottsdale. Keynote Speaker: Dan Devine, Executive Director Sun Angel Foundation. Sponsor: Good Samaritan Medical Center, Phoenix. Contact: Sue Nelson, Good Samaritan Medical Center, Phoenix, Arizona, (602)239-6773. Special Note: Phoenix Open Golf Tournament (January 14-20) tickets can be arranged. Accreditation: CME's being applied for.

CONTEMPORARY APPROACHES TO SEXUAL FUNCTION/DYSFUNCTION

January 24—27, 1985, Park City, Utah. Emphasis on etiology, diagnosis and treatment — Four day program allows for maximum learning with ample opportunity for skiing. CME & CE Credit. Contact: Conference Office, Box A-5 1120 Annex, University of Utah, Salt Lake City, Utah 84112 (801) 581-5809.

NINTH ANNUAL NEW MEXICO METABOLISM SYMPOSIUM

January 23—27, 1985, Tennis Ranch of Taos, New Mexico. Discussion will focus on data related to our understanding of some aspects of Type II Diabetes. Additionally, workshops are planned which will focus on current use of insulin(s). We feel the program will provide both practical and therapeutic insight in these areas of diabetes for the interested physician. All meetings will be held in the conference room of the Tennis Ranch of Taos. Registration fee for the meeting is $150 — reduced fee of $75 is available for residents, fellows in training, nurses and physician assistants. The meeting is accredited for twelve (12) hours of Category I AMA, Physician's Recognition Award. Housing accommodations will be available at the Tennis Ranch at Taos. Arrangements have been made with Taos Ski Valley to provide special rates for ski lessons and lift tickets. Contact: Office of Medical Education, Lovelace Medical Center, 5400 Gibson Blvd., SE, Albuquerque, New Mexico 87108. (505) 262-7353.

FEBRUARY

Twelth Annual Symposium on Tumors of the Central Nervous System
February 11-13. La Posada Resort Hotel. Contact: Richard A. Thompson, M.D., 222 West Thomas Rd., Ste. 415, Phoenix, Arizona 85013 or call (602)277-2657.
Eighteenth Annual Southwestern Clinical Pharmacy Seminar—Geriatrics
February 22-24, 1985, Ramada Inn, Tucson, Arizona. Sponsor: U of A College of Pharmacy. Contact: Jack R. Arndt, Ph.D., College of Pharmacy, U of A, Tucson, Arizona, 85721

Emergency Care Update VII
February 25-27, 1985. Arizona Health Sciences Center, Tucson, Arizona. 22 hours Category I AMA; accreditation for nurses, osteopaths, emergency physicians, family practitioners will also be applied for. Contact: Continuing Medical Education and Outreach Arizona Health Sciences Center, Tucson, Arizona 85724 (602)626-6173, Lynne Mascarella, Program Coordinator, Office of Continuing Medical Education and Outreach.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St. Joseph's Hospital & Medical Center.
Contact: John R. Green, M.D.
Approved for 1 hour Category 1 credit.

The Ventricular System, Cerebrospinal Fluid and Hydrocephalus
Tuesday, November 20, 4:15-5:30 p.m., firs floor conference room, Hal W. Pittman, M.D., Chief, Section of Pediatric Neurosurgery

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second an fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

Barrow Neurological Institute wishes t announce the **Twelfth Annual Symposium** o Tumors of the Central Nervous System to b held on February 11-13 at the La Posad Resort Hotel. Topics will include variou approaches to difficult tumor areas, medica treatment of central nervous system tumors cellular genetics and malignant gliomas spinal cord tumors, operative monitoring magnetic resonance imaging, interstitia radiation therapy, immunotherapy, neuropathology and tumor cultures. For furthe information, write to Richard A. Thompson M.D., 222 West Thomas Rd, Ste. 415 Phoenix, AZ, 85013 or call 277-2657.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, Ed.D., Director of Education.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

55 N. 34th St., Phoenix, AZ 85018.
onsor: Camelback Hospital. Contact:
obert Meyer, M.D. Approved for Category
credit.
inical Conference
d Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

00 South Dobson Road, Mesa, Arizona.
ontact: William Selezinka, M.D. Approved
r Category 1 credit.
ME Programs
eekly, Tuesday, 7 p.m., Cafeteria-West
nd.
linical Conference — Dept. of Medicine
eekly, Thursday, 12:30-1:30 p.m. Buffet
unch, Grande Rm.
B/GYN Medical Staff Conference
eekly, Monday, 12:30-1:30 p.m. Grande
m.
ediatric Case Conference
nd Friday, 12:30 p.m., Grande 2.

UMANA HOSPITAL PHOENIX

747 East Thomas Road, Phoenix, Arizona
5016. Contact: Medical Staff Secretary for
dditional information.
hysicians Continuing Education Program
st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

400 N. Wilmot Road, Tucson, AZ 85712.
ontact: Eric G. Ramsay, M.D. Approved
r Category 1 credit.
amily Practice Department Meeting
st Monday, 12 Noon, (June, Sept. and
ec.) Contact: R. Grossman, M.D.
urgical Department Meeting
rd Monday, 11:45 p.m.
edicine Department Meeting
st Friday, 12:15 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

215 N. Beaver Street, P.O. Box 1268,
agstaff, AZ 86002. Contact: B. C.
irschberg, M.D., CME Program Clinical
onference. Approved for Category 1
redit.
nteresting Case Conference
st Tuesday, 12:30 p.m., Tollefson Rm.
linical Conferences
eekly, Tuesdays, 12:30 p.m.,
ollefson Rm.
umor Board Case Conference
rd Tues., 12:30 p.m., Hospital Conf. Rm.
ortality & Morbidity Conference
st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

111 East McDowell Rd., Phoenix, AZ
5006. Approved for Category 1 credit.
bstetrical Sectional Conference
st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m.,
Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m.,
Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m.,
Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m.,
Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m.,
Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday,
12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m.,
Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m.,
Family Practice Center.
Tumor Conference
2nd & 4th Wednesday, 12:00-1:00 p.m.,
Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m.,
Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m.,
Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m.,
T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m.,
Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m.,
Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon,
Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713.
Contact: Eric G. Ramsey, M.D., Approved
for Category 1 credit.
Surgical Conference
Weekly, Monday 8:00 a.m.,
Contact: Eric G. Ramsey, M.D.
Medical Conference
Daily, 12:30 p.m.,
Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m.,
Contact: James Byers, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact:
Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008.
Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m.,
Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m.,
Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008.
Contact: Leonard Tamsky, M.D.
Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
1st & 3rd Monday, 12 Noon.
Medicine GI
2nd & 4th Monday, 12 Noon.
Medicine Dermatology
5th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m.,
Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m.
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11:00 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m.
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7:30 a.m.
Anesthesiology Journal Club
4th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
4th Thursday, 8:00 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12:30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7400 East Osborn, Scottsdale, AZ 85251.
Contact: Tom Disney, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.
Outpatient Detoxification Program for Alcohol and Drug Abuse
Weekly, Friday, 7:30 am. - 8:30 am., Phillips Auditorium
Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.
Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711
Contact: Yvonne Clingerman, Medical Sta
Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
A Talk on Allergies
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium
Contact: Leonard Joffe, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

01 W. St. Mary's Road, Tucson, AZ
703. Contact: see below.

onthly Specialty Conference — Dept. of urgery
t Monday, 7:30 a.m., Century Rm. A.,
ontact: Med. Staff Office.

int Liver Conference - Lab Conference oom
nd Monday of each month - 12:00 noon.

rand Rounds: Medical, Surgical, Family ractice, Pathology, Radiology
eekly, Thursday.

mergency Medicine Lectures
eekly, Thursday, 8:00 a.m.,
entury Rm. A.

ardiology Conference
eekly, Friday, 8:00-9:00 a.m., Century
m., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

301 E. Grant Road, Tucson, AZ 85716.
ontact: Eric G. Ramsay, M.D. Approved for
ategory 1 credit.

ardiology Conference
st, 3rd, & 5th Mondays, 12 Noon,
ontact: M. Maximov, M.D.

ermatology Conference
h Monday, 5:00 p.m.,
ontact: R. Miller, M.D.

ndocrinology Conference
h Monday, 12 Noon,
ontact: M. Parker, M.D.

ephrology Conference
nd Monday, 12 Noon,
ontact: Stephen Seltzer.

sychiatry Department Meeting
rd Monday, 12 Noon,
ontact: Howard Winkler, M.D.

erinatal Conference
nd Tuesday, 7:00 a.m.

urgical Conference
nd Tuesday, 7:15 a.m.

ematology Conference
th Tuesday, 12 Noon,
ontact: Gerald Giordano, M.D.

ulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon,
Contact: B. Friedman, M.D.

Orthopedic Conference
st Tuesday, 7:30 p.m.,
Contact: Jay Katz, M.D.

Pediatric Grand Rounds
st & 3rd Tuesdays, 12:30 p.m.,
Contact: Dr. Lightner.

Neurophysiology Conference
nd Tuesday, 5:00 p.m.,
Contact: Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m.,
Contact: Dr. Fuchs.

Medical Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: M. Fuchs, M.D.

Neuorology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon,
Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m.,
Contact: N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon,
Contact: Cancer Committee.

GI Conference
Weekly, Friday, 12 Noon,
Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m.,
Contact: S.V. Hilts, M.D.

OB/GYN Conference
1st Friday, 7:30 a.m.,
Contact: Charles Parker, M.D.

OB/GYN Pathology Conference
3rd Friday, 7:30 a.m.,
Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Urology Conferences
Weekly, Tuesdays, Room 2413 - Uropathology
Weekly Tuesdays, Room D-335 — Consultation
Weekly, Fridays, Room 3134 — Uroradiology
These activities are a part of the CME program at the Veterans Administration Medical Center

Medical Service Grand Rounds
Weekly, Friday, 11:00 a.m. Rm. T-5,
Contact Dr. Zeller, Ext. 272

Medical/Surgical GI Conference
1st & 3rd Mondays, 3:00 p.m., Rm. 3134
Contact: Dr. Kozarek, Ext 413
Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm. T5,
Contact: Dr. Byrne, Ext. 426.

Endocrine Conference
Weekly, Friday, 1:00 p.m., Rm. C435,
Contact Dr. Benene, Ext. 786

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134,
Contact: Dr. Russo, Ext. 362
and Dr. Mertz, Ext. 495.

Surgery — Pathology Conference
4th Monday, 4:00 p.m., Rm 3134,
Contact: Dr. Mertz & Dr. Lanard.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesdays, 12:00 noon, Rm. C435, Contact: Dr. Sanowski, Ext. 321.

G.I. Grand Rounds
Weekly, Tuesday, 1:00 p.m., Rm. C435
Contact: Dr. Sanowski, Ext. 321

GI Pathology Conference
2nd and 4th Tuesdays, 12:00 noon,
Rm. 2413, Contact: Dr. Sanowski, Ext. 321

Renal Conference
Alternating Wednesdays, 1:00 p.m., Rm. C435, Contact Dr. N. Sharma, Ext. 212

Urology Histopathology Conference
Weekly, Tuesdays, 8:00-9:00 a.m., Rm 2410,
Contact: Drs. Haddad & Kivirand, Ext. 417.

Pulmonary X-ray Correlation Conference
Weekly, Wednesdays, 12:30-1:30 p.m.,
Room 4115, Contact: Dr. Rohwedder,
Ext. 388.

Cardiology Conference
2nd & 4th Thursday, 1:00 p.m., Rm. C435,
Contact: Dr. C. Sharma, Ext. 435

Medical/Surgical Chest Conference
1st & 3rd Thursdays, 12:30 p.m., Rm. 4115
Contact: Dr. Rohwedder.

Medical Mortality Conference
1st Friday, 11:00 a.m., Room T-5,
Contact: Dr. Zeller, Ext. 272

Medical-Surgical G.I. Conference
1st & 3rd Monday, 3:00 p.m., Rm. 3134
Contact: Dr. Sanowski Ext. 321 & Dr. Mertz, Ext. 495

Medical-Surgical Chest Conference
1st & 3rd Thursday, 1:00, Rm. C435,
Contact Dr. Rohwedder, Ext. 388

Neurology Conference
Alternating Wednesdays, 1:00 p.m., Rm. C435, Contact: Dr. Lawrence, Ext. 410.

Neuro-Psychiatry Conference
4th Thursday, 2:30 p.m., Rm. 4115, Contact Dr. Arnold, Ext. 647

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm. 3134, Contact: Dr. Russo Ext. 362 & Dr. Mertz Ext. 495

Psychiatry Service Clinical Conference
3rd Wednesday, 8:30 a.m., Rm. D512,
Contact Dr. Arnold, Ext. 647.

Pulmonary Xray Correlation Conference
Weekly, Monday, 10:00 a.m., Rm C435,
Contact Dr. Rohwedder, Ext. 388.

Surgery-Pathology Conference
3rd Monday, 4:00 p.m., Rm. 2413, Contact Dr. Mertz, Ext. 495 & Dr. Kerr, Ext. 511

Urology Conference
Weekly, Tuesday, 8:00 a.m., Room 3134,
Contact: Dr. Haddad, Ext 418.

Uropathology Conference
Weekly, Tuesday, 9:00 a.m., Rm. 2413
Contact: Drs. Haddad & Kivirand, Ext. 418

Uroradiology Conference
Weekly, Friday, 12:00, Rm. 3134, Contact Dr. Haddad, Ext. 418

Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134,
Contact: Dr. Cintora, Ext. 417.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m.,
Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC),
Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m.,
Contact: Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Department of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107,
Contact: J. Fitzharris D.O.
Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.
Neurology Grand Rounds
Weekly, Friday, 12:00 p.m.,
Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma, Az 85364 Contact: Alan Winfield, M.D. Approved for Category 1 credit.
Radiology Conference
1st Tuesday, 7:00 a.m.
Operation Outreach
2nd Tuesday, 6:30 p.m.
Pathology Conference
4th Tuesday, 7:00 a.m.
Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.
Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts:
Drs. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m.,
Room 5403.
Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC,
Dining Rm. C&D.
Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.
Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m.,
HSC Auditorium, Contact. Cancer Center.
Cardiac Catheterization Conference
Weekly, Friday, 4:30 p.m.,
Contact: Dr. Ewy.
Cardiology Non-invasive Conference
Weekly, Friday, 3:30 p.m.,
Contact: Dr. Ewy.
Tucson Cardiac Society
1st Thursday, 6:30 p.m., Arizona Inn,
Contact: Karen Garcia.
Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact:
John Boyer, M.D., Dept. of Internal Medicine.
Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly,
Rm. 5505., Contact: Jerry Goldstone, M.D.,
Dept. of Surgery.
Dermatology Conference
4th Monday, 5:15 p.m., AHSC,
Contact: Dr. R. Friedman.
Dermatology Rounds
Weekly, Wednesday, 11:30 a.m.,
Contact: Dr. Lynch.
Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m.,
Contact: Dr. S. Coulthard
Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m.,
Contact: Dr. Johnson.
Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC,
Contact: Dr. Sanders.
GI Pathology Conference
4th Friday, 1:30 p.m., AHSC,
Contact: S. Paplanus.
GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC,
Contact: Dr. T. Hunter.
Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m.,
Contact: Dr. Murrell.
Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m.,
Rm. 6505. Contact: S. Salmon, M.D.,
Dept. of Internal Medicine.
Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m.,
AHSC, Contact: Dr. J. Smith.
Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC,
Contacts: Drs. Hughes & Alcorn.
Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m.,
Contact: Dr. Stern.
Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC,
Contact: Dr. P. Johnson.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m.,
Contact: Dr. P. C. Christenson.
Neuromuscular Journal Conference
2nd & 4th Thursdays, 7:00-9:00 p.m.,
Contact: Dr. Stern.
Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m.,
AHSC, Contact: Dr. C. Bamford.
Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC
Radiology Conference Rm.
OB/GYN Lectures
Weekly, Friday, 3:30 p.m., AHSC,
Contact: Dr. C. D. Christian.
Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC,
Contact: Dr. J. Herschler.
Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC,
Contact: Dr. H. Cross.
Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.
Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining
Rm. C&D, Contact: Drs. Hameroff & Cork.
Pathology Conference
Weekly, Monday, 12 noon, AHSC,
Contact: Dr. C. D. Christian.
Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC,
Rm. 5120. Contact: Dr. P. Finley.
Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC,
Contact: Dr. A. R. Graham.
Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC,
Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: Dr. Lillian Valdes-Cruz.
Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m.,
Contact: Dr. Otakar Koldovsky.
Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact:
Dr. Marilyn Heines & Jane Ruggill.
Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC,
Rm. 8403, 5th Floor Auditorium.
Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact:
Dr. Alan Levenson, Palo Verde Hospital.
Pulmonary Rounds
Weekly, Friday, 11:30 a.m.,
Contact: Dr. Benjamin Burrows.
Chest Radiology
Weekly, Monday, 5:00-6:00 p.m.,
Rm. 1535F, UAHSC. Contact:
Irwin M. Freundlich, M.D.,
Department of Radiology.
Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC,
Contact: Dr. Christenson.
Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC,
Rm. 0655.
Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC,
Contact: Dr. Freundlich.
Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC,
Library Rm.1535C.
Renal Pathology Conference
1st, 3rd, & 5th Thursdays, 11:30 a.m.,
Contact: Dr. Nagle.
Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon,
AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m.,
Diag. Radiology Conf. Rm.
Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC,
Contact: Dr. Wangensteen.
Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m.,
Contact: Dr. Wangensteen.
Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 5505.
Toxicology Conference
Weekly, Tuesday, 8:00 a.m.,
Contact: Dr. Keith Likes.
Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC,
Contact: Dr. I. Freundlich.
General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon,
AHSC & VA Hospital
Contact: Dr. G.W. Drach.
Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC,
Contact: Dr. J. Goldstone.

Communicate

To help patients communicate more effectively with their physicians, the Arizona Medical Association has developed two patient information brochures, **HOW TO CUT YOUR HEALTH CARE COSTS** and **THE PATIENT-PHYSICIAN RELATIONSHIP, A WORKING PARTNERSHIP.**

The brochures offer advice on telephoning and visiting the doctor's office, discussing fees, and exchanging information. They also answer frequently asked questions concerning health care costs, what physicians are doing about the problem, and how patients can help in the effort. ArMA is making quantities of the brochures available to members at 10 cents each or $10 per hundred. To order your supply, mail the attached coupon to ArMA.

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Lots of 100 may be purchased for $10 (Non-members — $15

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A WORD TO THE WHYS

WHY AMA? Commitment to maintaining high quality at all levels of medical education is one of the AMA's proudest traditions. The AMA creates policy for medical education, participates in accreditation activities, and supplies the public with information on medical education issues. Proven dedication to high standards in medical education: it's one more good reason why you should be a part of the AMA.

WHY AMA? Now, for the first time there's a forum for hospital medical staffs to meet nationally to discuss common problems and changes in physician-hospital relationships. The Hospital Medical Staff Section was recently created by the AMA to provide leadership in ensuring quality patient care during this period of massive hospital restructuring. It's one more good reason why you should be a part of the AMA.

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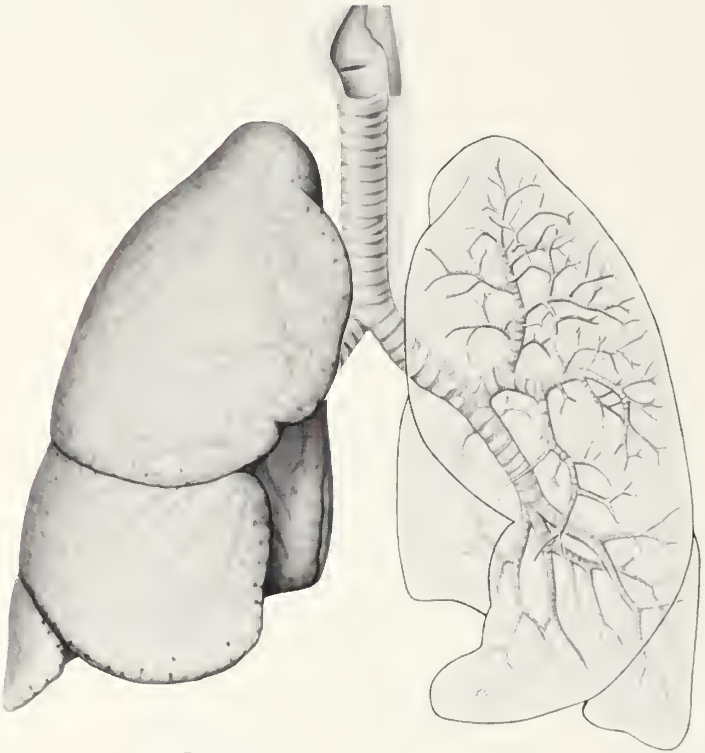
Consider the causative organisms...



Ceclor®
cefaclor

250-mg Pulvules® t.i.d.

offers effectiveness against the major causes of bacterial bronchitis

H. influenzae, *H. influenzae*, *S. pneumoniae*, *S. pyogenes*
(ampicillin-susceptible) (ampicillin-resistant)

Brief Summary Consult the package literature for prescribing information

Indications and Usage Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae* and *S pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings IN PENICILLIN SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C difficile* Other causes of colitis should be ruled out

Precautions *General Precautions* – If an allergic reaction to Ceclor® (cefaclor, Lilly) occurs, the drug should be discontinued and if necessary, the patient should be treated with appropriate agents, e g pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy appropriate measures should be taken

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy – Pregnancy Category B – Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor® (cefaclor, Lilly) There are, however, no adequate and well-controlled studies in pregnant women Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers – Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses Average levels were 0 18, 0 20, 0 21, and 0 16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour The effect on nursing infants is not known Caution should be exercised when Ceclor is administered to a nursing woman

Usage in Children – Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2 5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients)

Causal Relationship Uncertain – Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology they are listed below to serve as alerting information for the physician

Hepatic – Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic – Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal – Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200)

[061782R]

Note Ceclor® (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information

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Additional information available to the profession on request from
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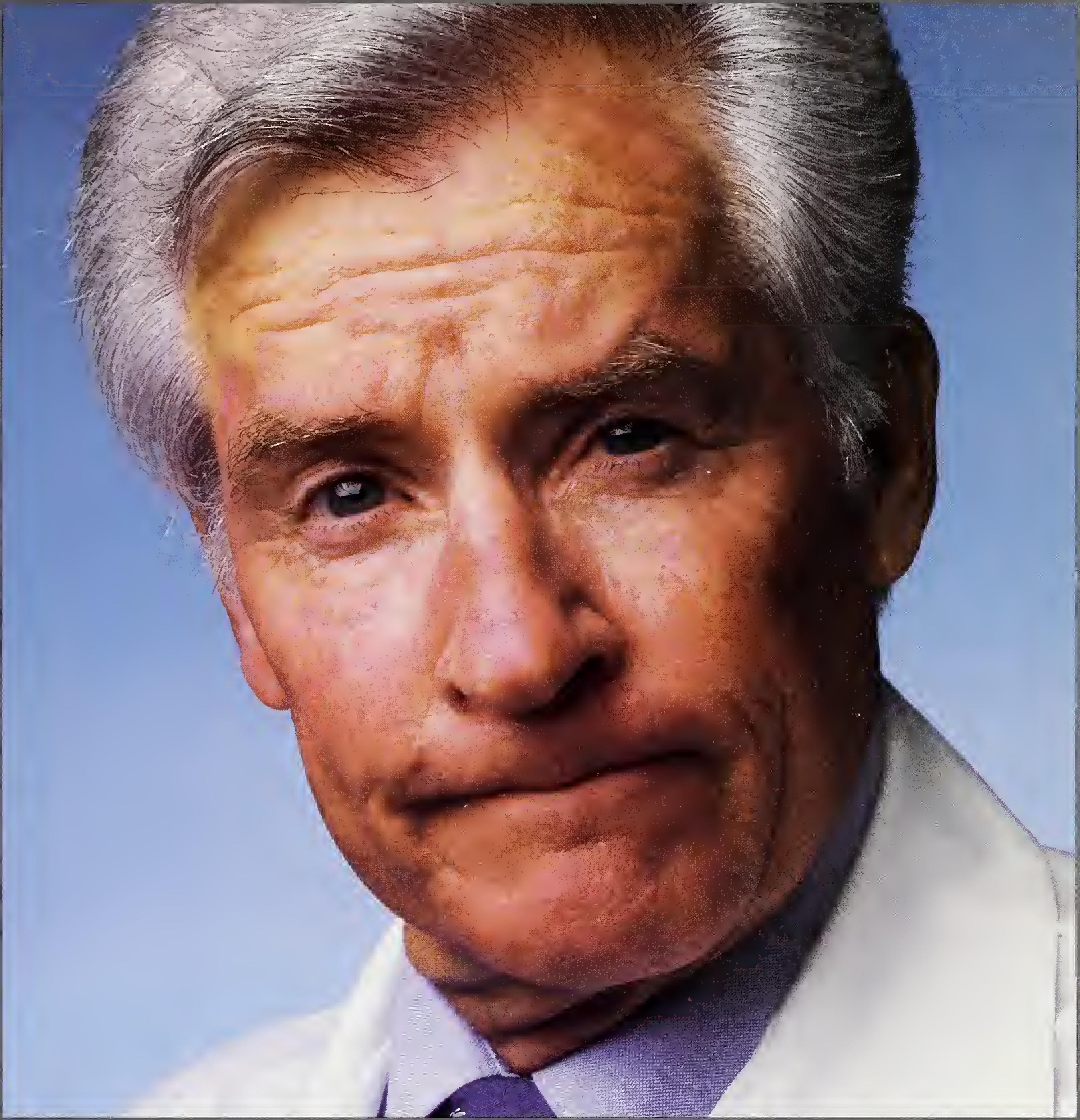
Indianapolis Indiana 46285

Eli Lilly Industries, Inc
Carolina, Puerto Rico 00630



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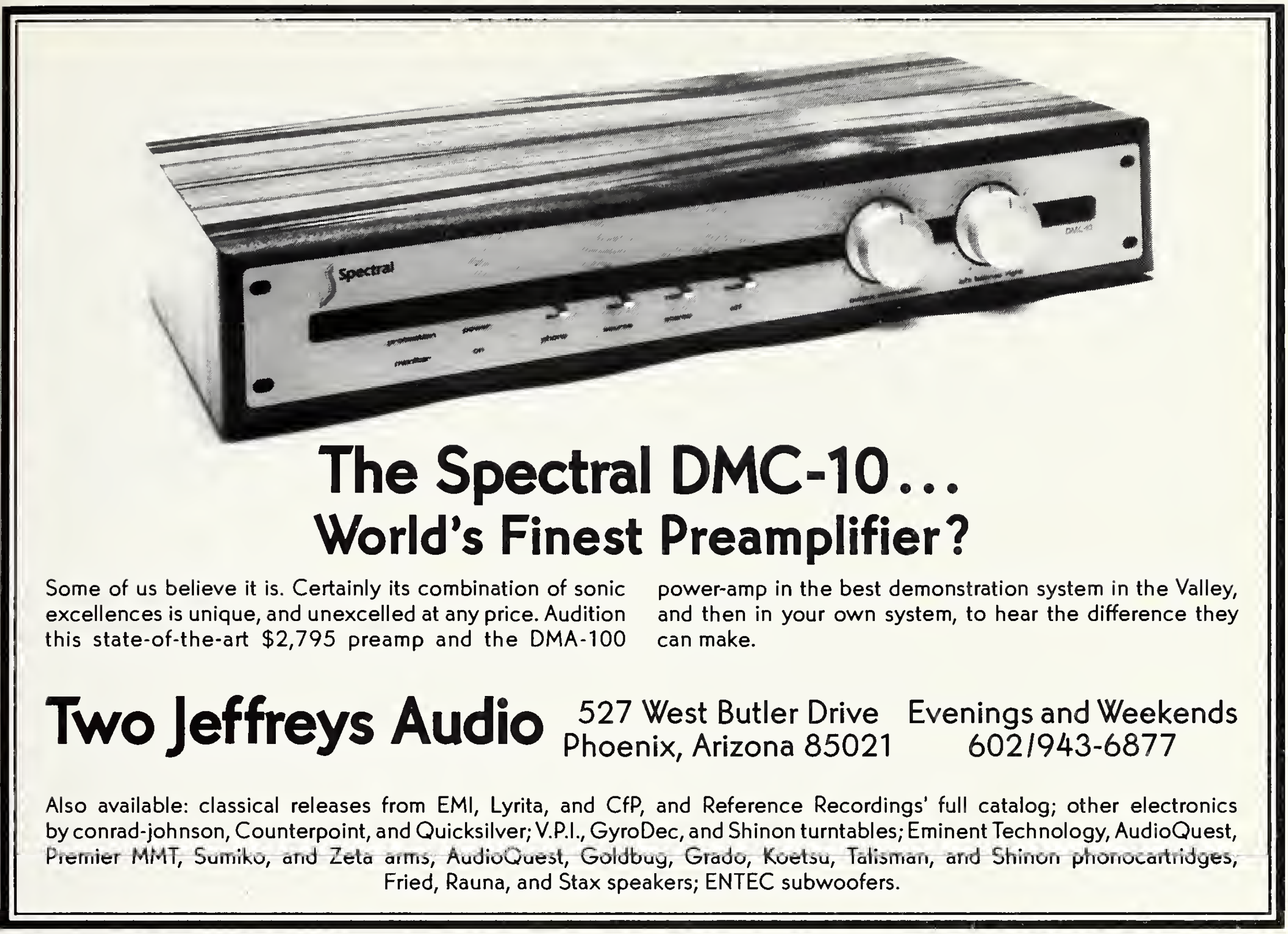

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______	017	Cimetidine
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______	026	Ethosuximide
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______	019	Phenytoin
______	037	Quinidine/Procainamide
______	020	Sulfonamides
______	008	Tetracyclines
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______	057	Isotretinoin
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______	055	Methysergide
______	045	Pentazocine—Oral
______	041	Phenothiazines
______	058	Potassium Supplements
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______	051	Triamterene and with Thiazide
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